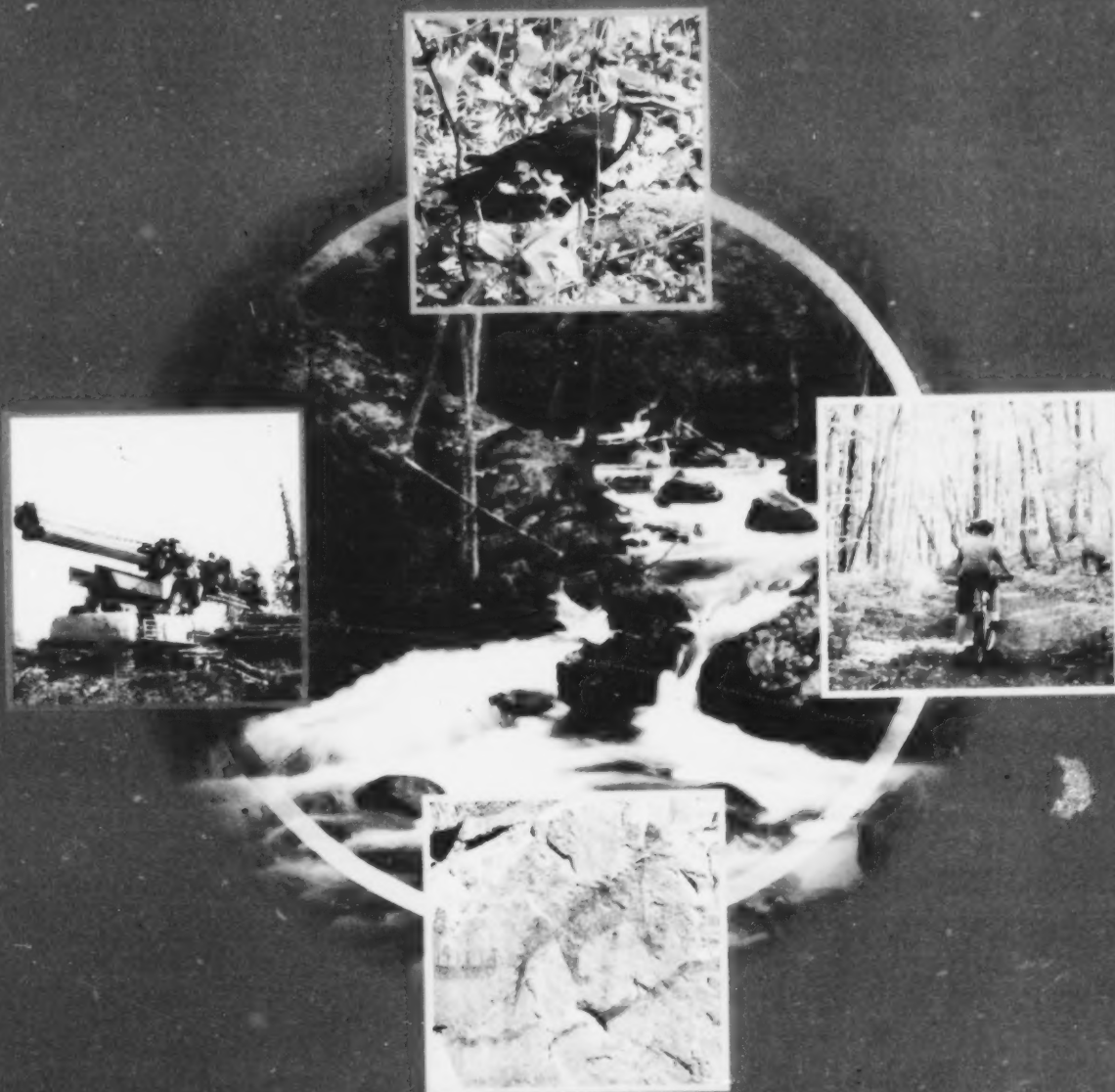


Annual Report on Forest Management 2003/2004



Annual Report on Forest Management

For the year April 1, 2003 to
March 31, 2004



Minister of Natural Resources of the Province
of Ontario

**To his Honour
The Lieutenant-Governor of the
Province of Ontario**

May it please your Honour

The undersigned begs respectfully to present to your Honour the Annual Report on Forest Management for the fiscal year beginning April 1, 2003 and ending March 31, 2004.

David Ramsay
Minister

May, 2006

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Executive Summary

The original approval for timber management activities under the *Environmental Assessment (EA) Act* covered nine years from 1994 to 2003 and expired during the term of this annual report. A review of the implementation of the original EA concluded in June 2003, when the Minister of the Environment (MOE) issued a declaration order. The MOE declaration order extended and amended the 1994 Class EA approval and outlined conditions for forest management on Crown land in Ontario within the area of the undertaking (AOU). One of the conditions required the MNR to continue to table an annual report on forest management in the provincial legislature.

This is the MNR's ninth annual report on forest management under an EA approval. This report marks a transition, from reports which were consistent with the previous EA terms and conditions, to a new report format which is consistent with the conditions of the 2003 Class EA approval for forest management on Crown lands in Ontario. It covers the fiscal year April 1, 2003 to March 31, 2004. Due to the time period when data was collected, some of the information refers to the 2002-2003 fiscal year.

The forest management legislative and policy framework of the MNR has undergone significant improvements in the last decade. The *Crown Forest Sustainability Act* (CFSA), which came into effect in 1995, requires anyone operating in an Ontario Crown forest to ensure the long-term health of the forest so that the benefits from the province's forests are available to future generations.

The MNR has instituted changes affecting the responsibilities of the forest industry, the opportunities for the general public to become involved in forest management planning, the system for licensing forest companies, the fees paid to harvest trees, and has stabilized the dedicated funding for forest renewal.

Ontario's 107.6 million hectare area is comprised of about 88.7 million hectares of land and 18.9 million hectares of water. The AOU, where most forest management activities on Crown land occur, totals 38.5 million hectares of forest. Productive forest on Crown land in the AOU covers about 33.6 million hectares, with 21.8 million hectares of this area eligible for forest management activities. Ontario also has 5.6 million hectares of productive forest land under private ownership, 14 percent of the province's inventoried productive forest landbase. Private forests account for 13.5 percent of Ontario's growing stock, including approximately one-half of the volume of hard maple and "other hardwoods". The focus of this annual report is to provide information on the activities carried out on the eligible 21.8 million hectares of Crown forest in 2003-2004.

As of April 1, 2003, the AOU was divided into 49 management units. A 50th management unit is comprised of all the pieces of Crown land in southern Ontario outside the AOU.

The CFSA requires that an approved Forest Management Plan (FMP) be in place for each management unit. A FMP describes the values of the forest in a management unit, as well as the harvesting, re-

newal, and other forest management activities that will occur. FMPs are renewed every five years through a process that provides opportunities for public input. In 2003-2004, six FMPs were approved for implementation.

The 2003 class EA approval for Forest Management also impacted the Forest Management Planning Manual Revision Project, during the 2003-2004 reporting period. Several of the conditions led to changes in the manual as described in chapter 2.

The *Forest Information Manual* is one of four regulatory manuals required by the CFSA. This manual describes the requirements for exchanging information concerning the management of Crown forests between the forest industry and the MNR. Implementation of the *Forest Information Manual* continued during 2003-2004. To facilitate information exchange between the MNR and the forest industry the Forest Information Portal (a web based data exchange system) was introduced in 2002. Improvements to the Portal were made to support the submission of information for the 2003-2004 management unit annual reports from the forest industry to the MNR. The Forest Information Portal is now well established and commonly used; further development and improvement is expected to continue over the next few years.

The CFSA provides for two types of licences governing the use of forest resources in Ontario: Forest Resource Licences (FRLs) and Sustainable Forest Licences (SFLs). In 2003-2004, there were a total of 4,318 licences in place in Ontario.

Forest management operations require a complex system of primary and secondary roads, the cost of which is now borne largely by forest companies. In 2003-2004, 299 kilometres of new primary and secondary roads were constructed in Ontario forests. Maintenance work was carried out on another 18,096 kilometres of roads. A total of 4,382 kilometres of roads had access controls, while approximately 479 kilometres of forest roads were abandoned in 2003-2004.

The figures reported for disturbance, harvest area and volume are from 2002-2003, since data collection on harvesting and other disturbances is not com-

pleted until the year following the disturbance. In 2002-2003 forest fires occurred on 23,045 hectares of productive forest in the AOU. There were 143,420 hectares of insect-infested forest in the AOU where significant mortality occurred. There were also approximately 7.7 million hectares on which significant growth loss occurred due to insect damage, resulting in a total loss of almost 2.0 million cubic metres of wood. Annual volume losses from disease in the AOU in 2002-2003 were approximately 12.0 million cubic metres, while weather damage losses of almost 28.3 million cubic metres occurred on 2.7 million hectares of forest.

Harvesting activities took place on 230,729 hectares of forest in 2002-2003. The clearcut silvicultural system was used on 92.3% of the area harvested. In 2002-2003, 41 management units within the Boreal Forest reported average clearcut sizes from 21 to 1,987 hectares. Maximum clearcut sizes reported ranged from 73 to 12,483 hectares. Nine management units within the Great Lakes-St. Lawrence Forest reported average clearcut sizes from 5 to 135 hectares. Maximum clearcut sizes ranged from 26 to 550 hectares. A total of approximately 24.2 million cubic metres of wood was harvested within the AOU in 2002-2003.

The CFSA requires a portion of the money received from the harvest of Crown forests to be designated exclusively for forest renewal activities. In 2003-2004, the Government of Ontario received a total of approximately \$185 million from timber sales, of which approximately \$98.5 million went directly to funds designated for the maintenance and renewal of the forest, and for work associated with ensuring the future of the forest.

Renewal of the forest occurs both naturally and with assistance. In 2003-2004, natural regeneration, both even and uneven-aged, took place on 88,066 hectares of land. Assisted renewal was carried out on 104,472 hectares. Site preparation activities, through mechanical means, use of herbicides, and prescribed burning, were completed on another 54,621 hectares. Tending activities were also conducted to improve the quality and growth of some areas of the forest. During 2003-2004 tending activities, such as thinning, were carried out on 83,764 hectares of forest.

Free-To-Grow (FTG) assessments are an effectiveness monitoring tool that indicates the success of silvicultural treatments and information to project the future forest condition. In 2003-2004, approximately 200,000 hectares were assessed in 39 management units. Of the total area assessed for FTG, 80 percent was approved as having achieved the FTG standard within a set time period. An additional seven percent was approved as having achieved an alternate accepted FTG standard.

The forest industry is required to report the results of their compliance inspections to the MNR. MNR conducts inspections to verify all instances of non-compliance reported by companies. The MNR also carries out random and other planned inspections of forest operations. Of the 9,104 inspections undertaken across the province, companies conducted 6,888 and the MNR completed 2,216. The vast majority of the inspections reported compliant operations. A total of 56 remedial actions were required by the MNR, including warnings, "stop work" orders, and administrative penalties.

All management units within the AOU must be audited at least once every five years. In 2003-2004, Independent Forest Audits were undertaken on 6 management units. Audit reports were prepared for the Driftwood, Dryden, Ottawa Valley, Timmins,

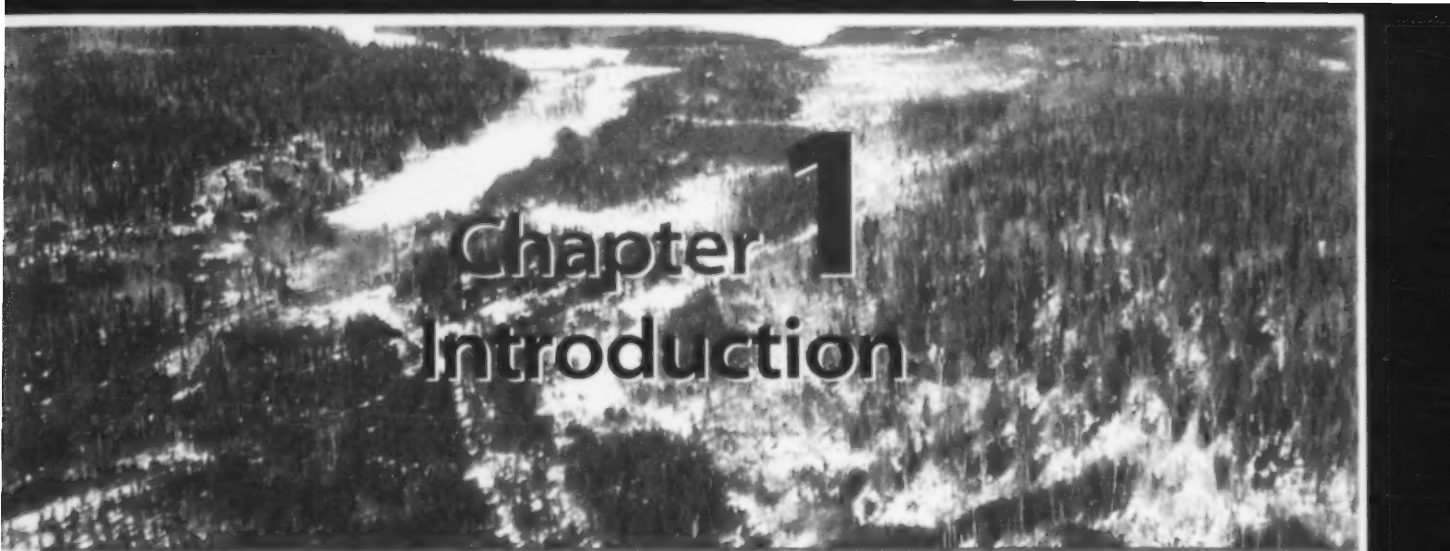
White River Forests and Timmins Management Units.

Forest certification involves an independent third party evaluating forest management systems and/or operations against a prescribed ecological, economic and social standard. Five forests achieved CSA certification. In addition, all previously registered/certified forest units continued efforts to demonstrate ongoing conformance to their selected certification systems during the fiscal year. During the 2003-2004 fiscal year, two SFL holders and one overlapping licensee obtained new International Organization for Standardization 14001 registrations which may help them prepare to become certified.

This report describes the efforts of MNR districts, the forest industry and First Nations communities to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits derived from forest management activities.

A primary monitoring responsibility of the MNR is to assess the effects of forest management activities on the forest ecosystem over the long term. The final chapter of this report details policies, procedures, scientific studies and research that the MNR is undertaking to ensure that forest management guides, data, methodologies, and underlying science are available to effectively monitor and manage forest management activities.





Chapter 1

Introduction

Management of Ontario's forests has evolved through past decades from managing for timber to stewardship for all the values of the forest. With the 1995 introduction of the *Crown Forest Sustainability Act* (CFSA)¹, Ontario adopted a policy of managing Crown forests according to the principles of sustainable forest management. Large, healthy, diverse, and productive forests and their associated ecological processes and biological diversity are conserved for future generations through the balancing of the environmental, economic and social components of forest sustainability.

The Environmental Assessment Process

Forest management has also been guided by the *Environmental Assessment Act*. In 1994, after 6 years of extensive public hearings, the Environmental Assessment Board released its *Reasons For Decision And Decision, Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario* (Timber Class EA approval) for a large part of the province, referred to as the Area of the Undertaking.

On June 25, 2003, the EA was renewed by a *Declaration Order regarding MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario*. This annual report is the first to be produced consistent with the new EA declaration order.

Annual Report on Forest Management

This is the ninth annual report on forest management, covering the period April 1, 2003 to March 31, 2004. Note that information on forest disturbances, such as harvesting, forest fires, and insects, is for the April 1, 2002 to March 31, 2003 period. The areas disturbed from April 1, 2003 to March 31, 2004 (the period of this report) do not have completed maps and inventories until late fall of 2004. Therefore, collection of data on disturbances is completed too late in any given year for it to be included in a report on activities during that same year.

In the current year, 11 management units (Black River, Black Sturgeon, Brightsand, Caribou, Cochrane-Moose River, Dog River-Matawin, Dryden, English River, Nipissing, Shiningtree and Temagami) failed to provide accepted reports within the required time frame. Data estimates have been used in cases where an accepted report does not exist. Three management units (Caribou, English River and Shiningtree) have repeatedly failed to provide acceptable reports, thus the reader is cautioned that estimates for these areas may not be accurate.

New or updated data and information submitted since the previous Annual Report on Forest Management are included in this report. Errors or omissions

¹ All acronyms used in this report are defined in an appendix at the end of the report. Literature references are listed in an appendix at the end of the report.

noted since the publication of the previous report are also corrected or updated in this report. Five-year tables and graphs are included in this report to provide updated information and a means to view and assess trends in the data.

Overview

With this annual report, the MNR provides information to help in understanding how Ontario's Crown forests are being managed, as well as baseline information to compare with future forest management activities and annual reports. The chapters of this annual report can be described as follows:

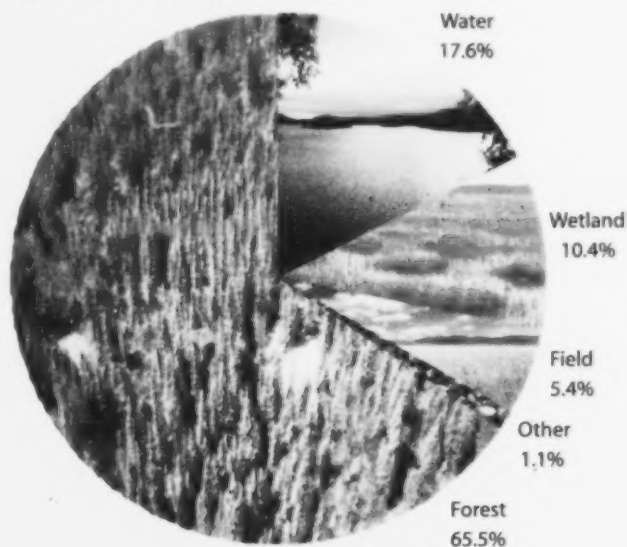
- Chapter 1 provides background for the annual report and a summary of the forests of Ontario.
- Chapter 2 outlines the legislative framework which regulated forest management planning activities in 2002-2003.
- Chapter 3 summarizes forest use activities and government revenue generation.
- Chapters 4 through 7 present a detailed description of forest management activities, and the systems employed by MNR to monitor forest sustainability.
- Chapter 8 presents an update on the MNR's progress in negotiations with Aboriginal peoples regarding opportunities for increased participation in the benefits of forest management.
- Chapter 9 concludes with progress reports on selected MNR research, scientific studies, and technical and policy development programs.

Forests of Ontario

Throughout this document, Crown land refers to land held in trust by the province for the people of Ontario and, in general, managed by the MNR. Statistics found in this chapter are from provincial inventories updated in 2001, and reflect changes resulting from Ontario's Living Legacy program. The *Forest Resources of Ontario 2001* should be consulted for a more complete description and summarization of the provincial inventories.

Ontario's 107.6 million hectare area is comprised of about 88.7 million hectares of land and 18.9 million hectares of water. Figure 1a illustrates the broad land classes in Ontario. Non-productive and productive forests comprise over sixty-five percent of the province. This is significantly higher than the comparable total for Canada, where forests represent only forty-two percent of the country's area.

Figure 1a. Land classes of Ontario



Three major ownership groups are described in this report - Crown, parks, and private or other owners. Seventy-nine percent of the province's area is Crown or publicly-owned land and water. Provincial and national parks cover an additional eight percent, and privately-owned land and water encompasses the remaining thirteen percent.

For forest management purposes, the province may be partitioned geographically, depending on the context. Subdivisions commonly referenced in this report include:

- Ecological Subdivisions
- Forest Regions
- Ecological Land Classification (ELC) Regions
- Administrative Subdivisions
- Management Zones
- MNR Administrative Regions and Districts
- Management Units

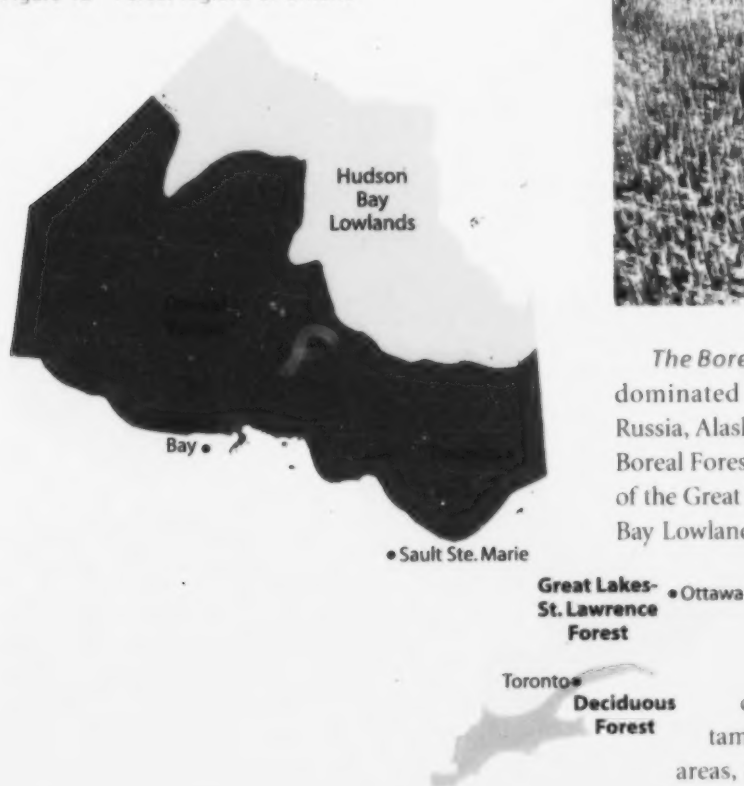
Ecological Subdivisions

Forest Regions of Ontario

Four major forest regions are represented in Ontario - the Deciduous Forest region in southern Ontario, the Great Lakes-St. Lawrence Forest region in southern and central Ontario, the Boreal Forest region in Northern Ontario, and the Hudson Bay Lowlands region in the far north. Over 97 percent of Ontario's population lives within the Great Lakes-St. Lawrence and Deciduous Forest regions.

Each forest region is characterized by its own climate, forest ecosystems, and associated wildlife species. North-south shifts in temperature and east-west gradients in precipitation largely determine the extent of these forest regions. Natural transition zones also occur between forest regions. As a result, certain tree species may appear in what seem to be inappropriate forest regions. For example, maple or white pine can be found within the southern reaches of the Boreal Forest. A map of the forest regions of Ontario is shown in Figure 1b.

Figure 1b Forest regions of Ontario



The Hudson Bay Lowlands is a large, low-relief expanse of wetland, one of the largest in the world. With an area of 25.7 million hectares, it is comprised of both treed and open muskeg (74 percent), dotted with thousands of small lakes and ponds. Forest cover is less than 17 percent and is typified by stunted tamarack (also known as larch) and black spruce growing along riverbanks and other well-drained areas. The Hudson Bay Lowlands support a great variety of wildlife including polar bears, geese, and other animals normally associated with Arctic habitats. The Hudson Bay Lowlands are greatly affected by a cold northern climate, and contain all of Ontario's tundra. The region also contains Ontario's largest park, the 2.3 million hectare Polar Bear Provincial Park. Figure 1c shows an aerial view of a landscape typical of the Hudson Bay Lowlands.

Figure 1c Black Spruce typical of the Hudson Bay Lowlands



The Boreal Forest is a world-wide band of conifer-dominated forest stretching across Scandinavia, Russia, Alaska, and northern Canada. In Ontario, the Boreal Forest region extends from the northern limits of the Great Lakes-St. Lawrence Forest to the Hudson Bay Lowlands. With an area of 49.8 million hectares, this forest region is, by far, the largest in the province. In the Boreal Forest, specific tree species are often associated with particular soil types and terrain conditions. For example, black spruce and tamarack are often found in poorly-drained areas, while trembling aspen, white birch, and

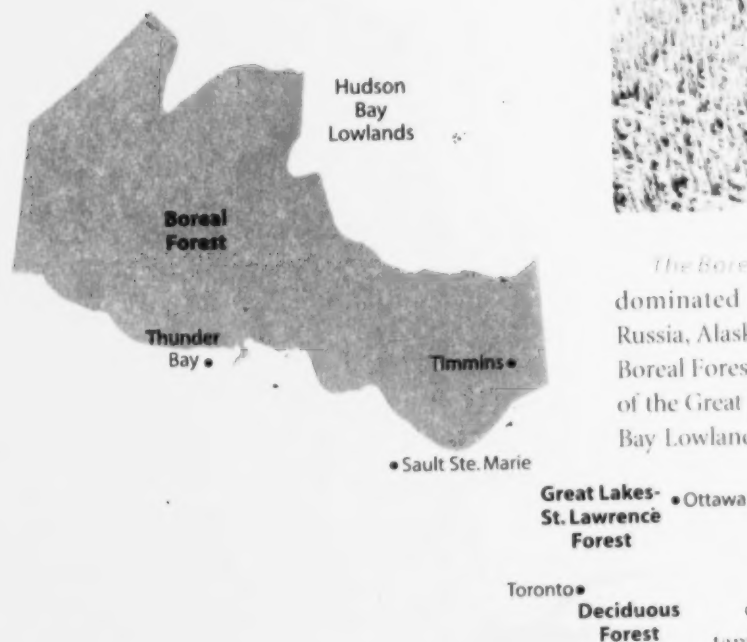
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Figure 1b: Forest regions of Ontario



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Figure 1c: Aerial view of a typical landscape of the Hudson Bay Lowlands



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jack pine grow on well-drained sites. Black spruce comprises 50 percent of all tree species in the Boreal Forest by growing stock volume.

The boreal softwoods (jack pine, black spruce, white spruce, balsam fir and tamarack) and intolerant hardwoods (trembling aspen, white birch, and balsam poplar) are generally even-aged in character. Boreal forests are characterized by natural disturbance, and are heavily influenced by the size, intensity, and frequency of fires that have burned across the landscape. Winds also affect forest conditions by blowing down trees or forest stands. Insects can defoliate large areas of forest. During the last 80 years, timber harvesting and forest fire suppression have affected the tree species mixture and age class structure of the Boreal Forest. Figure 1d shows a birch stand found within the Boreal Forest.

Figure 1d Intolerant hardwood stand found within the Boreal Forest



The Great Lakes-St. Lawrence Forest region extends inland from the edges of the Great Lakes and the St. Lawrence River in central and southern Ontario. This forest region represents 20 percent of Ontario's actively managed Crown forest. The greatest concentrations of this forest type occur on the north and east shores of Lake Huron, in the Algonquin Park area, and in the Great Lakes-Boreal transitional zone that stretches from Thunder Bay to Fort Frances in northwestern Ontario.

Sugar maple, white pine, red pine, eastern white cedar, hemlock, tamarack, black spruce, white spruce, red oak, white oak, red maple, basswood,

ash, poplar, yellow birch, and white birch are dominant species in this zone. Parts of this forest region have thin soils over granite bedrock, while deep, well-drained soils are found elsewhere. The great diversity of sites and habitat in this region supports many wildlife species. Figure 1e illustrates a white pine stand typical of the Great Lakes-St. Lawrence Forest.

Figure 1e White pine stand typical of the Great Lakes-St. Lawrence Forest



The Deciduous Forest is located in the southernmost part of Ontario, and is the only occurrence of this type of forest in Canada. Situated primarily in smaller pockets of forest on private land and within provincial parks on the north shore of Lake Erie, the Deciduous or Carolinian Forest region exists in the most densely populated area of Ontario. This region is now home to more than 25 percent of Canada's population, even though it covers less than one percent of the country's land mass. The region is over 3 million hectares in size, but less than 15 percent is forest. More than 75 percent of this region is agricultural land, while most of the remainder is urban. Forests in this region are now mostly found in locations with low agricultural potential, such as sand plains and bottomlands. These forest fragments have been greatly modified by human activities.

Surface deposits ranging from gravel to clay cover the limestone bedrock that underlies the Deciduous Forest region. Maple, sassafras, walnut, and several varieties of oaks grow here. The Deciduous Forest region generally has the greatest diversity of tree species, while possessing the lowest proportion of forest in Ontario. With its rich forests and warm climate, several unique wildlife species, such as opossum and red-bellied woodpecker are present. Good examples of Deciduous Forest exist on Lake Erie's northern shore, in parks such as Wheatley, Rondeau, and Turkey Point. Figure 1f shows a multi-species hardwood forest typical of the Deciduous Forest region.

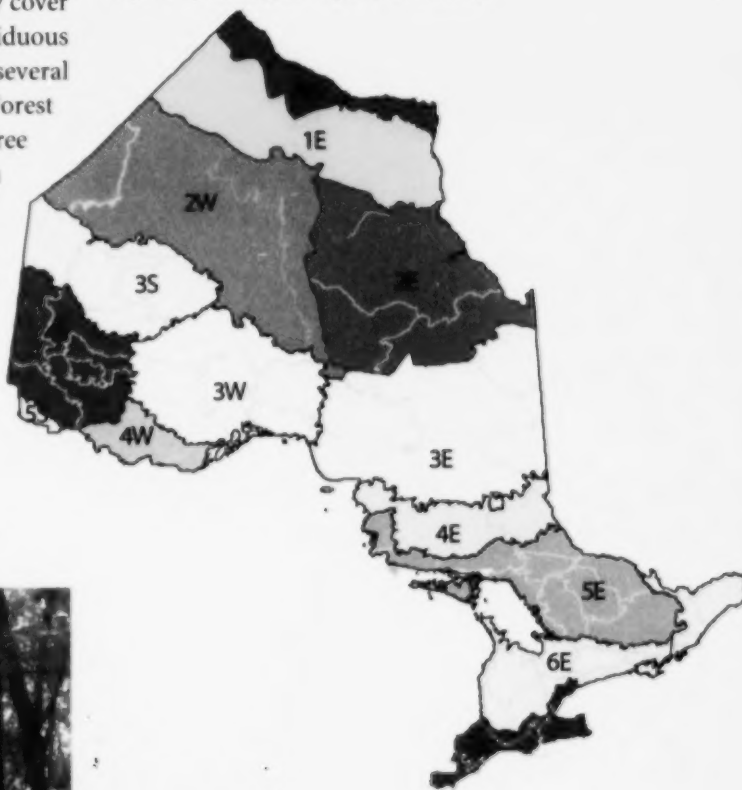
Figure 1f Multi-species hardwood stand typical of the Deciduous Forest region



Ecological Land Classification (ELC) System

The ELC system is a hierarchical and consistent framework for classifying landscape and site-level ecosystems formed by combinations of geologic, climatic, vegetative, soil, and landform features. At the broadest scales the ELC system is guided by a set of 14 ecoregions. Each ecoregion is further subdivided, resulting in a total of 71 ecodistricts across Ontario. A map illustrating the ecological regions of Ontario is shown in Figure 1g. For further details about the use and development of the ELC, see Chapter 10.

Figure 1g Ecological regions of Ontario



Administrative Subdivisions Management Zones

Ontario, comprised of 107.6 million hectares of land and water, is divided into three forest management zones (Figure 1h). The Northern Boreal Forest (41.9 percent of Ontario) describes the large expanse of Boreal Forest and Hudson Bay Lowlands in the far north. The Planning Area (42.1 percent of Ontario) refers to the middle zone where forest management planning and associated operations are currently carried out on Crown lands. Southern Ontario (7.7 percent of Ontario) is an area of mostly private land, where the majority of the population of Ontario lives. The Great Lakes make up the remaining 8.9 million hectares, or 8.3% of Ontario.

Productive forest on Crown land in the Planning Area covers about 33.7 million hectares, or 31.3% of Ontario. Within this area the forest area managed for harvest is limited to 21.8 million hectares, or 20.3 percent of Ontario (Figure 1i).

Introduction

Surface deposits ranging from gravel to clay cover the limestone bedrock that underlies the Deciduous Forest region. Maple, sassafras, walnut, and several varieties of oaks grow here. The Deciduous Forest region generally has the greatest diversity of tree species, while possessing the lowest proportion of forest in Ontario. With its rich forests and warm climate, several unique wildlife species, such as opossum and red-bellied woodpecker are present. Good examples of Deciduous Forest exist on Lake Erie's northern shore, in parks such as Wheatley, Rondeau, and Turkey Point. Figure 1f shows a multi-species hardwood forest typical of the Deciduous Forest region.



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Administrative Subdivisions/ Management Zones

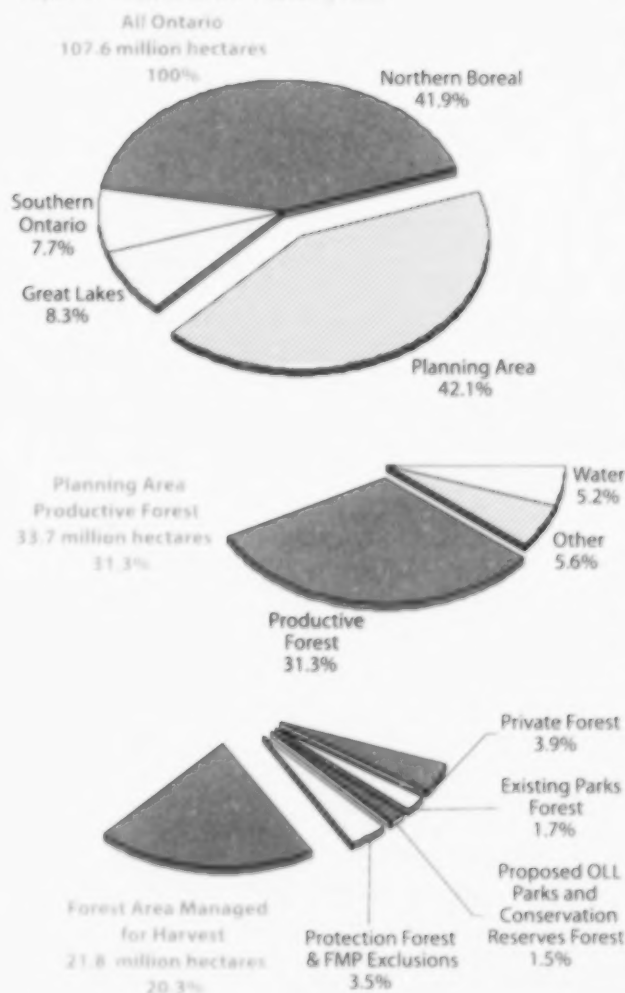
Ontario, comprised of 107.6 million hectares of land and water, is divided into three forest management zones (Figure 1h). The Northern Boreal Forest (41.9 percent of Ontario) describes the large expanse of Boreal Forest and Hudson Bay Lowlands in the far north. The Planning Area (42.1 percent of Ontario) refers to the middle zone where forest management planning and associated operations are currently carried out on Crown lands. Southern Ontario (17.7 percent of Ontario) is an area of mostly private land, where the majority of the population of Ontario lives. The Great Lakes make up the remaining 8.9 million hectares, or 8.3% of Ontario.

Productive forest on Crown land in the Planning Area covers about 33.7 million hectares, or 31.3% of Ontario. Within this area the forest area managed for harvest is limited to 21.8 million hectares, or 20.3 percent of Ontario (Figure 1i).

Figure 1b Forest management zones in Ontario



Figure 1c Extent of the Planning Area



The Planning Area referenced in this document is essentially the same as that area identified in Ontario's *Living Legacy Land Use Strategy*. The context for this area was defined during the Ontario's Living Legacy (OLL) process, essentially starting with the Area of the Undertaking from the Timber Class EA approval, and adding the six large parks (totalling 2.1 million hectares) bordering this area - Woodland Caribou, Wabakimi, Quetico, and Lake Superior Provincial Parks, Pukaskwa National Park, and Michipicoten Island. Since the OLL process there has been a slight revision to this Planning Area, which now includes the remaining 135,000 hectares of Wabakimi Provincial Park.

The process of regulating the proposed parks and conservation reserves in the OLL project will continue to occur over the next few years. Part of this process involves resizing individual parks, as boundaries are refined. Small increases and decreases occur as part of this regulation process, while still maintaining 12 percent or more of the Planning Area designated as parks and protected areas.

Administrative Regions and Districts

MNR administrative region and district boundaries are shown in Figure 1j. For administrative purposes, the province is divided by the MNR into three regions, each with a regional office - Northwest Region (Thunder Bay), Northeast Region (Timmins/South Porcupine), and Southern Region (Peterborough). These three regions are subdivided into a total of 26 MNR administrative districts, each with a designated local office. For the purpose of carrying out forest management activities, MNR districts are further divided into individual forest management units.

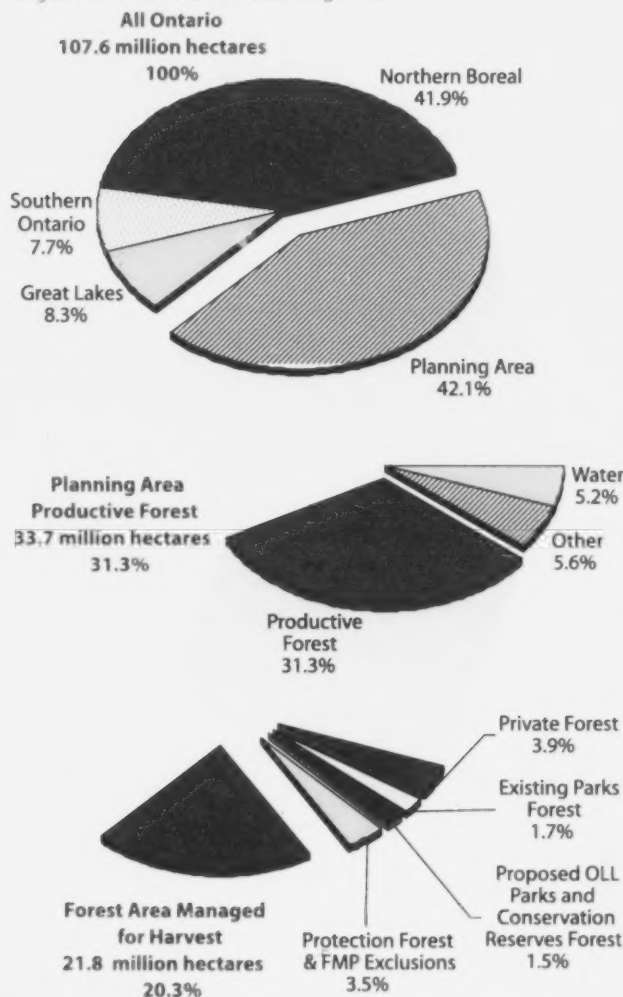
Management Units

MNR Regional Directors approve Forest Management Plans (FMP) developed for management units, based on direction in the *Forest Management Planning Manual for Ontario's Crown Forests*. For a more complete explanation, see Chapter 3. A map and list of the management units in effect as of April 1, 2003 is provided in Appendix 1.

Figure 1h Forest management zones in Ontario



Figure 1i Extent of the Planning Area



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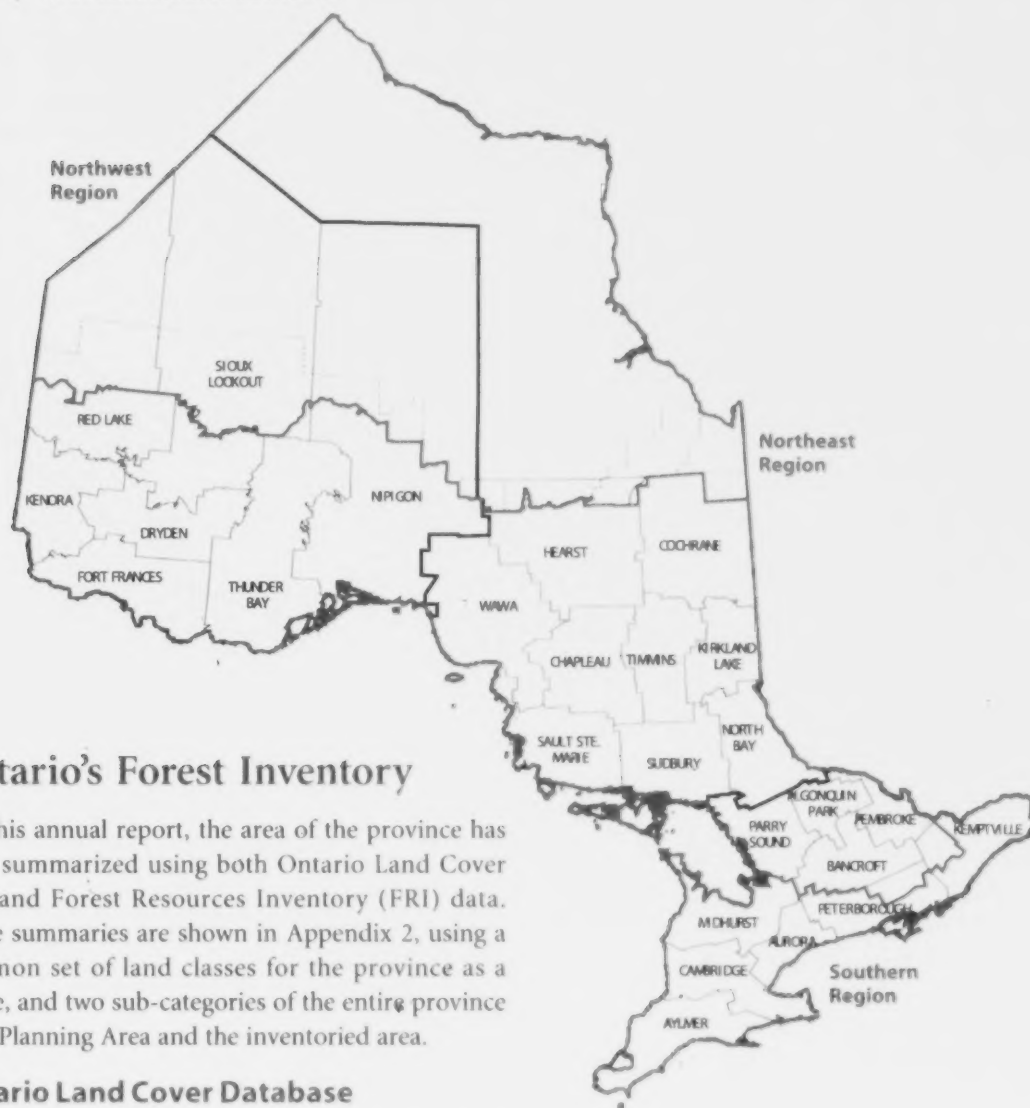
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Figure 1j MNR administrative boundaries



Ontario's Forest Inventory

For this annual report, the area of the province has been summarized using both Ontario Land Cover data and Forest Resources Inventory (FRI) data. These summaries are shown in Appendix 2, using a common set of land classes for the province as a whole, and two sub-categories of the entire province - the Planning Area and the inventoried area.

Ontario Land Cover Database

The Ontario Land Cover Database is the first land cover classification in Canada to be completed for an entire province wholly from satellite remote sensing data. The Ontario Land Cover data was derived from digital, multispectral LANDSAT Thematic Mapper data recorded on a range of dates between 1986 and 1997. The majority of the satellite data frames were recorded in the early 1990s. The forest cutovers and burns were updated from 1996 Thematic Mapper coverage for the Great Lakes-St. Lawrence Forest region and most of the Boreal Forest region. The total provincial area summarized using this coverage is shown in Appendix 2.

Forest Resources Inventory

Using aerial photographs and field verification, the FRI is created by classifying forest stands and other areas into broad physical categories including productive forest, non-productive forest, non-forested land, and bodies of water.

Each component is further classified by its ownership and land use. The FRI provides descriptive information in the form of interpreted aerial photographs, forest stand maps, and computerized data, used for management planning and to monitor the health of the forest.

A new inventory must be conducted on each management unit approximately every 25 years. Updates are required at the start of each new FMP to reflect all changes to the forest (i.e., depletions and accruals) that occurred prior to the commencement of the new FMP. Depletions include harvest and natural reductions, such as those caused by wildfire, insects, disease, and severe weather events. Accruals include the results of forest renewal and tending activities for both assisted and naturally regenerated areas.

FRI updates occur only within the Planning Area for use in FMPs. The average age of the FRI within the Planning Area is approximately seven years. Inventories of southern Ontario and the extreme north are more than 20 years old. A vast area of the extreme north is not inventoried. For comparison purposes, FRI summaries for both the Planning Area and the inventoried area are included in Appendix 2.

Other Sources

Other documents are available to provide background about forest management in Ontario. They include:

- the *Declaration Order regarding MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario* which amends and extends the Timber Class EA Approval. It outlines conditions for forest management on Crown land in Ontario;
- the *Crown Forest Sustainability Act*, enabling legislation which provides for the regulation of forest planning, public involvement, information management, operations, licensing, trust funds for reforestation, processing facilities, remedies and enforcement;
- the *Policy Framework for Sustainable Forests*, which lays out the principles for managing forests sustainably in Ontario;
- the MNR's *Statement of Environmental Values*, which sets out the environmental principles that govern the MNR's management of Ontario's natural resources;
- the *Forest Management Planning Manual for Ontario's Crown Forests*, which provides direction for

all aspects of forest management planning for management units in the Area of the Undertaking;

- the *Forest Operations and Silviculture Manual*, which is a compendium of guidance and direction for the conduct of operations authorized by approved FMPs;
- the *Scaling Manual*, which provides standard instructions for determining the quantity, quality and movement of Crown timber harvested in Ontario;
- the *Forest Information Manual*, a technical document that describes the requirements and standards for information needed to support forest management planning on Crown lands in Ontario;
- the *Forest Resource Assessment Policy*, which provides provincial direction for the assessment of Ontario's Crown forest resources. This policy supports the provisions in the CFSA for determining forest sustainability and managing Ontario's Crown forests in a sustainable manner.
- the *Forest Resources of Ontario 2001*, a snapshot of statistics on the state of Ontario's forests;
- the *State of the Forest Report, 2001*, the first such report on the condition of Ontario's forest resources, for the period 1995-2000 (as required by condition 84 and Appendix 22 of the Timber Class EA approval, the CFSA, and the *Forest Resource Assessment Policy*); and
- Ontario's forest management guides, which include technical considerations, standards, guidance, and performance targets used during the preparation and delivery of FMPs. They may also include suggestions on the best ways of carrying out forest management operations, sometimes referred to as "best management practices".

Further information on these sources, and electronic versions of many of these documents, are available from the Forest Management portion of the MNR's website: <http://ontariosforests.mnr.gov.on.ca/spectrasites/internet/ontarioforests/publications.cfm>

Printed copies of this report contain a CD with additional background information gathered from our websites and provided for the convenience of the reader.



Chapter 2

Forest Management Planning

Ontario's advanced forest management planning system includes a comprehensive planning process, extensive public consultation and detailed plan content requirements. The legislative framework for this system is provided by the *Crown Forest Sustainability Act* and the *Environmental Assessment Act*. These two Acts also provide the basis for the *Forest Management Planning Manual for Ontario's Crown Forests* (FMPM) and the *Forest Information manual* (FIM). This chapter provides a brief reference on the legislative and regulatory improvements as well as information on forest management planning related activity.

Forest Management Class EA

The original approval for timber management activities under the *Environmental Assessment Act* covered nine years from 1994 to 2003 and expired during the term of this annual report. Term and Condition #114 required the MNR to undertake a comprehensive review of the forest management activities covered by the Timber Class EA approval, and to submit a report containing its findings, including recommendations, for amending and extending the approval. The completion of that review was documented by the previous annual report.

The review was completed with particular focus on the progress of the implementation of the exist-

ing Timber Class EA approval and on MNR's recommendations for revised terms and conditions. The report was then submitted to the Ministry of the Environment (MOE). Draft conditions were prepared by MOE based on MNR's recommendations and in consideration of the views of stakeholders. MOE then conducted public consultation on the draft conditions in preparation for a final decision.

The result of the review process was a declaration order, approved by the Minister of the Environment June 25, 2003, outlining conditions for forest management on Crown Land in Ontario. The declaration order extends and amends the class EA Approval to allow MNR to continue forest management planning on Crown Lands subject to conditions in the declaration order. Many of the conditions in the declaration order directly apply to the forest management planning system and as such are required to be incorporated into the *Forest Management Planning Manual* while others apply to the broader forest program.

The declaration order compliments existing legislation and regulations for forest management in Ontario and although there is no expiry date, the declaration order requires annual reports tabled in the legislature, review and reporting of forest management activities to MOE every five years and opportunities for public input for proposed changes to the FMPM. An amendment process is provided by the declaration order to allow timely revisions and updates.

Forest Management Planning Manual Revision

An approved FMP must be in effect before any forest operations are undertaken on a management unit. The FMPM outlines the detailed planning process and plan contents required before plan approval. Each FMP includes a description of the forest management unit and a long term strategic direction including objectives and a determination of forest sustainability. FMPs also contain detailed information on areas of operations such as areas to be harvested and renewed and prescriptions to protect forest values such as fish and wildlife habitat and archaeological sites. Access road construction and maintenance is also included in each FMP.

The MNR monitors the implementation of each FMP to ensure that operations are consistent with the approved plan. At the end of each year and following each five-year term, reports on FMP implementation are prepared, including an assessment of forest sustainability. Much of the information presented in this provincial report comes from these management unit annual reports.

Conditions in the declaration order issued under the *Environmental Assessment Act* require improvements to the *Forest Management Planning Manual*. These improvements will be made through amendments to the manual to incorporate declaration order conditions 1 – 26 within one year of the declaration order coming into force (i.e. by June 25, 2004). Efforts in regard to FMPM improvements were initiated as early as 2001 while final amendments to the FMPM will be based on the declaration order (June 25, 2003), extensive public consultation through a 60 day public comment period (November 21, 2003 to January 20, 2003), review and approval by cabinet, and final review by MOE to ensure the intent of the conditions were met.

Forest Information Manual

The *Forest Information Manual* describes the requirements for exchanging information about the management of Crown forests between the forest industry and the MNR.

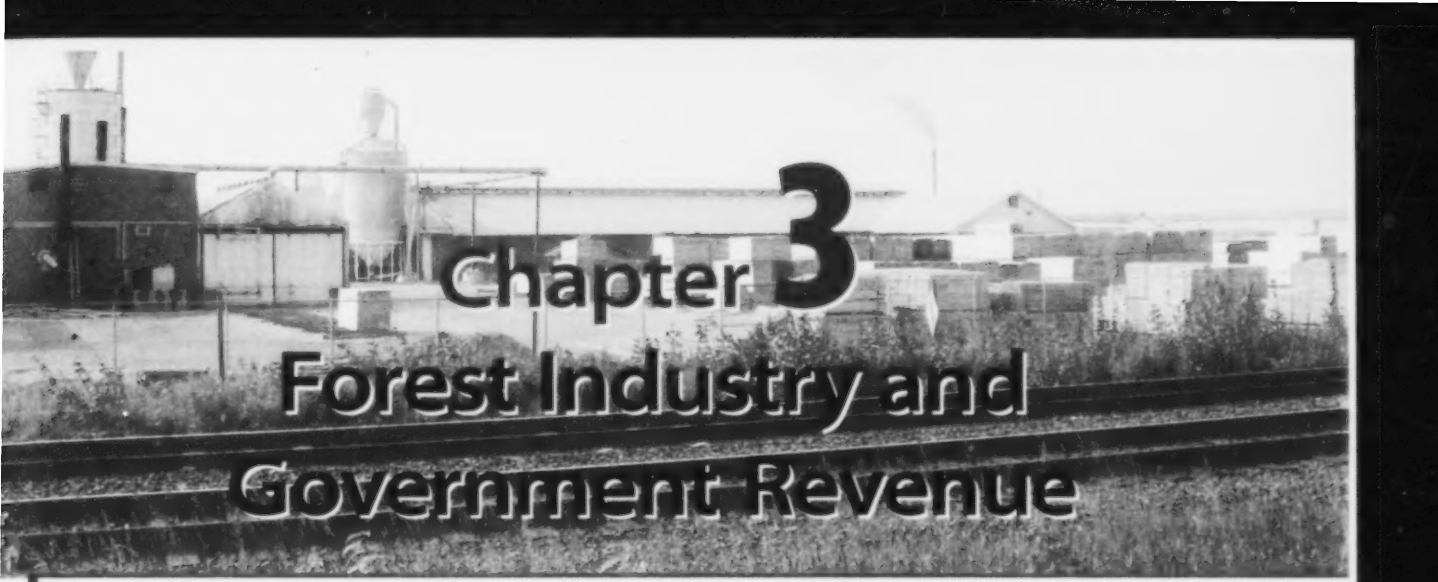
Implementation of the *Forest Information Manual* has continued to be a considerable challenge, since both the forest industry and the MNR maintain and use different information systems and database structures, and organize their information and data in different ways. However, progress is being made as a result of efforts by both parties, primarily related to the efforts of the Joint MNR/Forest Industry Information Management Committee and continued improvements to the Forest Information Portal.

Improvements to the Portal were made to support the submission of information for the 2003-2004 management unit annual reports from the forest industry to the MNR. The Portal is now well established and frequently used and further development and improvement is expected to continue over the next few years.

Forest Management Units and Plans

This forest management planning system is based on, or applied to, a planning area known as a forest management unit. The Ministry of Natural Resources has continued efforts to rationalize and consolidate forest management units to realize efficiencies in forest planning and FMP implementation. As of April 1, 2003, the Area of the Undertaking was divided into 49 management units. One additional management unit (for a total of 50) is comprised of Crown land in southern Ontario outside the Area of the Undertaking. This is a reduction of 4 management units compared to the previous year (i.e. April 1, 2002). Further reductions in the number of management units are expected.

Appendix 1 provides a map and list of forest management units as of April 1, 2003. During 2003-2004, management units ranged in size from 205,000 hectares to 1,863,000 hectares of managed Crown land, with an average unit size of 699,000 hectares. There were 6 forest management plans approved for implementation in 2003, while work was initiated or continued on an additional 19 plans. Appendix 3 includes a listing of the 2003 FMPs, as well as the complete plan renewal schedule for all management units.



Chapter 3

Forest Industry and Government Revenue

Ontario's Crown forests provide numerous opportunities and benefits, for recreation, tourism, hunting, trapping, fishing, and food production. For example, millions of Ontario residents reported participation in various forest-based leisure activities in 2003 (Table 3a).

Many Aboriginal communities in Ontario are situated in forested environments, and these communities often make extensive use of the forest. Opportunities for Aboriginal peoples to have more equal participation in the benefits of forest management are discussed in Chapter 8.

Ontario's forests also supply the basic resources for a variety of industries, including lumber, structural board, pulp, paper, and newsprint. In addition, facilities that support forest activities and numerous service industries also depend on Crown forests. While there are many users of the forests of Ontario, this chapter focuses on the forest industry,

and the revenues provided by the forest industry to the government of Ontario.

Forest Products Industry

The logging, wood products and paper manufacturing sectors, plus other related industries, comprise the forest products industry. The logging industry includes both large and small contractors, as well as large, mill-owned operations. The contractors may work independently or directly for company-owned mills.

The wood products manufacturing industries include businesses such as sawmills, veneer mills, and structural board plants producing both construction materials and specialty wood products. The capital investments in these facilities range from a few thousand to over \$250 million dollars.

Table 3a Persons participating in forest-based leisure activity in Ontario

Persons Participating in Ontario

Leisure Activity	1999	2000	2001	2002	2003
Bird Watching	1,049,000	1,019,000	977,000	1,003,000	1,067,000
Canoeing	1,210,000	1,257,000	1,154,000	1,220,000	1,079,000
Cross-Country Skiing	626,000	609,000	477,000	505,000	492,000
Fishing	1,699,000	1,632,000	1,498,000	1,650,000	1,591,000
Hunting	502,000	479,000	417,000	459,000	344,000
Mountain Biking	n/a	n/a	667,000	679,000	671,000
Snowmobiling	583,000	620,000	450,000	470,000	340,000
Walking/Hiking	4,320,000	4,406,000	3,962,000	4,143,000	4,204,000

Source: Print Measurement Bureau Readership Surveys

Pulp and paper mills are the largest types of plants for converting wood fibre to forest products. A Greenfield pulp mill can cost close to \$1 billion. Outputs from pulp and paper mills represent almost 60 percent of the value of all forest product shipments.

The value of sales from Ontario's forest products sector increased to \$ 18.9 billion in 2002 from \$18.4 billion in 2001, but again dropped down to \$ 18.8 billion in 2003. Table 3b shows the value of sales (shipments) by the Ontario forest sector for the five-year period ending in 2003.

Value added, the amount the industry actually contributes to the Ontario gross provincial product (this eliminates the double counting effect of sales between the forest product manufacturers and their suppliers), fell to \$7.8 billion in 2003 from \$8.1 billion in 2002. Table 3c shows the value added in 2003 for the logging industry and both major forest sector industries - the wood product industries, and the paper and allied industries.

Employment within the forest industry in 2003 was 316,000¹. Included in this figure are direct, indirect, and induced jobs. Table 3c shows direct employment only.²

As well as being a major employer, the forest industry annually invests in capital improvements and mill expansions. The forest industry had capital and repair expenditures of \$1.15 billion in 2002, that increased to \$1.31 billion in 2003.

Forest Sector Employment

Based on the 2001 Statistics Canada census, 28 Ontario communities, most located in Northern Ontario, had at least 20 percent of their labour force employed in the forest industry. Appendix 4 lists these Ontario communities, shows the total labour force for each community, and identifies the percentage that worked in the forest sector.

Harvest Licence System

The vast majority of Ontario's forests are harvested by companies or individual operators that hold one of two types of licences - Sustainable Forest Licences (SFLs) and Forest Resource Licences (FRLs). The total number of both licence types issued in the year 2003-2004 is shown in Table 3d. Many FRLs and salvage licences are issued on existing SFLs, and are listed in the overlapping licence column.

Table 3b Ontario forest products sector sales

Year	Value of Shipments (million \$)
1999	\$15,849
2000	\$18,709
2001	\$18,420
2002	\$18,869
2003	\$18,789

¹ The logging component was not available for the years 2000 to 2003, and were estimated using 1999 values

Source: Statistics Canada 2001

¹ Statistics Canada and MNR's Socio-Economic Impact Model

² Statistics Canada Labour Force Survey is using a new Standard Industrial Classification system which renders direct comparisons with previous years inappropriate.

Table 3c Distribution of manufacturing activities by sector and direct employment within each sector, 2003

Sector	Number of Establishments % of Canadian		Number of Employees % of Canadian		Total Value Added Value Added % of Canadian (million \$) Total	
	Number	Total	Number	Total	(million \$)	Total
Logging*	1,657	17%	6,000	11%	\$559	12%
Wood Product Manufacturing	940	24%	38,000	20%	\$2,626	22%
Paper Manufacturing	407	48%	42,000	39%	\$4,625	36%
Total	3,004	21%	86,000	25%	\$7,810	26%

Number of establishments and Value Added - Annual Survey of Manufacturers
 Number of employees - Labour Force Survey
 * 2001 Logging information is based on 1999 values

Source: Statistics Canada

Table 3d Number of licences issued in 2003-2004, by licence type

Licence Type	Number of Licences		
	Overlapping	Not Overlapping	Total
Sustainable Forest Licence	0	55	55
FRL < 300 hectares	3,548	548	4,096
FRL > 300 hectares	151	8	159
FRL Salvage	0	8	8
Total	3,699	619	4,318

Among other requirements, a SFL requires the licensee to prepare forest management plans following the direction of the *Forest Management Planning Manual for Ontario's Crown Forests*. The licensee is responsible for implementing forest management plans by carrying out access, harvest, renewal, and maintenance activities. The SFL holder must follow the rules and guidelines set by the MNR to ensure sustainable forest management. FRL holders follow forest management plans approved by the MNR and must operate to ensure the long-term health of the forest. For further details on Ontario's forest management planning system, see Chapter 3.

Resource Stewardship Agreements

Resource Stewardship Agreements (RSAs) are a means for SFLs and licensed tourism establishments, two key forest users, to collaborate on the development of planning solutions proposed during the forest management planning process. The *Tourism and Forestry Industry Memorandum of Understanding* (2001) provides direction for the development of these RSAs. The Memorandum of Understanding recognizes the value of two industries working co-operatively to understand each other's needs and of working together in the development of planning proposals. While this co-operative approach to planning has been used in some parts of Ontario for the past

10 or more years, the Memorandum of Understanding commits the industries and government to support use of the process everywhere in the Crown forest. Use of the RSA process is intended to provide greater security for the two industries and help them avoid costly and time-consuming forest management conflicts.

Issues commonly addressed in RSAs include access road use controls, viewscape protection and timing restrictions on forest operations. In 2003 the first 8 RSAs were signed, and another 8 are under development. A further 22 tourist operators have expressed interest to SFL holders, declaring that they have an interest in this process.

Ontario's Stumpage System

In 2003-2004, the Government of Ontario received direct payments from the forest industry in the form of stumpage fees, and indirect revenue from taxes.

Forest companies pay a stumpage fee to the Crown for every cubic metre of timber harvested. A market-based pricing system is used by the MNR to calculate the stumpage fees that companies and individuals pay for harvesting timber from Crown land. In times of strong market prices for forest products, the stumpage system triggers higher fees. In poor markets, harvesters pay lower fees.

The Crown's stumpage fees have four components:

- A minimum charge per cubic metre of harvested timber, regardless of the species, goes to the Consolidated Revenue Fund of the province. This charge is adjusted annually. Table 3e shows the changes in the minimum charge since 1999.

- A forest renewal levy to provide dedicated funding for forest renewal. This charge varies depending upon the tree species and its anticipated renewal cost. Forest renewal charges are held in either a Forest Renewal Trust Fund or a Forest Renewal Special Purpose Account and

Table 3e Minimum stumpage charge per cubic metre

Fiscal Year	Minimum Charge
1999/00	\$3.23
2000/01	\$3.28
2001/02	\$3.40
2002/03	\$3.44
2003/04	\$3.48

can only be used for regenerating and maintaining the health of Ontario's forests.

- A residual value charge, paid to the province's consolidated revenues by forest companies or individuals licensed to harvest timber. The calculation of this charge varies from zero in times of low forest product prices to about \$23 per cubic metre when product prices are high depending on species and product sector.
- A Forestry Futures Trust charge is also applied; this charge is a \$0.48 per cubic metre of timber harvested. The Forestry Futures Trust is managed by an independent Crown committee. It funds projects that meet MNR-approved criteria. To qualify, projects must be: a silvicultural activity on Crown land that addresses renewal of trees killed or damaged by fire; renewal of land where a licensee becomes insolvent; forest protection from insect or disease infestation; intensive stand management related to a critical wood supply; or, expenditures for Independent Forest Audits, Forest Resource Inventories, or conversion charges³.

Table 3f shows the direct payments from the forest industry to the various government accounts during the last five fiscal years. The Forest Renewal Special Purpose Account will be phased out when all management units, currently under direct management by the MNR, are converted to SFLs.

Private Woodlands

Ontario has 5.6 million hectares of productive forests under private ownership, 14 percent of the province's inventoried productive forest landbase. Approximately 95 percent (1.9 million hectares) of the productive forest south of the Planning Area is privately owned, while 11.1 percent (3.7 million hectares) of the productive forest in the Planning Area is privately owned. Private forests account for 13.5 percent of Ontario's growing stock, including almost one-half of the gross total volume of hard maple and "other hardwoods".

In 2003, annual returns from forest resource processing facilities indicate that 10% of the gross total coniferous volume and 26% of the gross total deciduous volume processed in Ontario originates from private land. This equals 15% of the total volume processed. However, this does not fully recognize the contribution of Ontario's private land to provincial wood supply. Smaller facilities (processing less than 1,000 m³/year) are not required to be licensed and do not file annual returns. Wood that leaves the province and wood that is not processed at a facility (e.g., fuelwood) are also not accounted for. The total contribution of private land could be closer to 17%. Ta-

³ Conversion charges are used to assist new, smaller SFLs with costs associated with the establishment of an SFL (e.g., inventory).

Table 3f Crown charge payments by the forest industry

Year	Forestry Futures Trust	Consolidated Revenue Fund	Forest Renewal Trust	Forest Renewal SPA ^a	Total Payments
1999/00	\$10,050,700	^a \$155,695,700	\$78,668,100	\$5,147,900	\$249,562,400
2000/01	\$11,180,600	^b \$105,191,500	\$83,893,900	\$2,306,800	\$202,572,800
2001/02	\$11,087,400	^c \$90,159,925	\$67,363,300	\$2,613,700	\$171,224,325
2002/03	\$11,880,265	^d \$90,579,662	\$88,951,235	\$3,111,670	\$194,522,832
2003/04	\$10,301,366	\$104,492,746	\$69,092,327	\$1,391,232	\$185,277,671

^aIncludes conversion funds of \$1,640,892 collected in 1999/00

^bConversion funds were not collected in 2000/01

^cIncludes conversion funds of \$100,349

^dIncludes conversion funds of \$50,044

^eAmounts are as of March 31, 2003

Note: Funds in the Forest Renewal Trust, the Forest Renewal Special Purpose Account, and the Forestry Futures Trust are not formally counted as revenue by the province, although funds in the Forest Renewal Special Purpose Account are held in trust in the province's Consolidated Revenue Fund.

Table 3g Wood volume originating from private land processed at licensed facilities.

Reporting Category		1999	2000*	2001*	2002*	2003
Hardwood	Volume (m ³)	1,708,979	1,360,598	1,888,843	1,656,919	2,506,999
	Volume (%)	20%	16%	24%	20%	26%
Softwood	Volume (m ³)	2,012,947	1,346,350	1,403,786	1,579,755	1,757,521
	Volume (%)	10%	7%	8%	8%	10%
Combined Hardwood & Softwood	Volume (m ³)	3,721,926	2,706,948	3,292,628	3,236,674	4,264,520
	Volume (%)	13%	9%	13%	11%	15%
Estimated Total from Private Land ²	Volume (%)	15%	11%	15%	13%	17%

* yearly data updated from previous annual reports

¹ Source: Facility Annual Returns (not verified); volume of whole tree chips (tonnes) converted to cubic metres (m³) with a 1.1 conversion; volume received from other facilities not included.

² Estimate includes a 2% increment to reflect smaller facilities, wood that leaves the province and wood that is not processed at a facility (e.g., fuelwood).

ble 3g summarizes volume originating from private land in Ontario that is processed at licensed facilities.

Private Land Initiatives

In accordance with applicable laws, the ultimate decision of how private land in Ontario will be managed is made by the landowner. The MNR's private woodland initiatives encourage landowners to move towards the standard set by the definition of "good forestry practices" in the *Forestry Act*:

"...the proper implementation of harvest, renewal and maintenance activities known to be appropriate for the forest and environmental conditions under which they are being applied and that minimize detriments to forest values including significant ecosystems, important fish and wildlife habitat, soil and water quality and quantity, forest productivity and health and the aesthetics and recreational opportunities of the landscape..."

MNR encourages stewardship of this resource and provides a framework for sustainability by:

- co-ordinating the programs and efforts of the many agencies and groups interested in promoting stewardship;
- providing education and skill training opportunities for landowners to become more knowledgeable about stewardship;

- providing effective policies as incentive to foster stewardship of woodlands, and
- providing legislative support.

The framework consists of both legislative and incentive components.

The Legislative Component

At the provincial level, the legislative component includes:

- the *Planning Act* and the Provincial Policy Statement;
- municipal tree bylaws passed under the *Municipal Act*, and
- other legislation targeted to protect landscape features and promote good forest management

The provisions of the *Planning Act* and *Municipal Act* provide a basis for municipalities to protect woodlands and their associated values. However, they are discretionary and not mandatory in nature. Monitoring developments in legislation and in the application of the legislation by municipalities may provide insight into how municipalities are addressing local concerns and pressures.

Significant Woodlands in the Provincial Policy Statement The Provincial Policy Statement (1997), which includes provisions for significant woodlands, was issued under the authority of Section 3 of the *Planning Act*, which requires that in exercising any authority that affects planning matters, planning

authorities "shall have regard to" policy statements issued under the *Act*. The Provincial Policy Statement indicates that development and site alteration may be permitted in significant woodlands south and east of the Canadian Shield, if it has been demonstrated there will be no negative impact on the natural features or ecological functions for which the area is identified. The MNR may provide expertise and technical support to municipalities in efforts to determine the significance of woodlands in their planning and development decision-making. Technical expertise is also provided to the Ministry of Municipal Affairs and Housing for its roles under the *Planning Act*.

In accordance with Section 3 of the *Planning Act*, the policies of the Provincial Policy Statement must be reviewed every five years. The purpose of the review is to determine the scope and nature of changes, which are required to effectively protect provincial interests in land use planning. The review was ongoing in 2004.

Tree Bylaws Ontario municipalities have traditionally had the authority to regulate the harvest of trees on private land through various statutes. Counties, regional municipalities and a few specific townships in southern Ontario were first able to pass tree bylaws through the *Trees Conservation Act* in 1946, then the *Trees Act* in 1950, and finally the *Forestry Act* (1998 amendments). Under the *Municipal Act* in 1994, all local municipalities with a population of greater than 10,000 could regulate tree cutting. Due to the population limit, bylaw provisions were not accessible to all municipalities.

To simplify the process and authority for tree bylaws, provisions were consolidated into the new *Municipal Act* (2001) which took effect on January 1, 2003. Upper-tier municipalities (counties and regional municipalities), lower tier municipalities (townships) and single tier municipalities now have equal access to tree bylaw powers. Provisions for tree bylaws have been removed from the *Forestry Act*; however by-laws enacted under the *Forestry Act* remain valid until they are repealed. The

Municipal Act provides enhancements such as the option to charge violations per tree, require permits to cut and impose conditions on the cutting; allow by-law officers to order cutting to stop, as well as providing increased fines of \$10,000 or \$1,000 per tree. Some municipalities now use tickets for minor violations simplifying the enforcement of tree bylaws. Table 3h lists the number of tree-cutting bylaws in Ontario by

Table 3h Number of municipalities with tree cutting bylaws in Ontario

MNR Region	Legislation	2000	2001	2002	2003
Southern	Forestry Act	23	24	24	19
	Municipal Act	15	16	16	22
Number of tree cutting bylaws in Ontario		38	40	40	41

year and the *Act* under which they were prepared. To learn more about tree bylaws, visit ontariowoodlot.com

Targeted Legislation The provincial interest in privately owned forests is also expressed for the Niagara Escarpment and Oak Ridges Moraine. Through enabling legislation, enhanced protection is provided under the *Niagara Escarpment Planning and Development Act* and the *Oak Ridges Conservation Act* and associated plans.

The MNR promotes natural area protection through conservation easements under the *Conservation Land Act*. Easements may be entered into with a qualified organization and landowners can provide limits on land use. Since the easement is registered on title, it binds all owners of the land over the easement's term. The land may be devalued in dollar terms by the easement, which can lower property taxes.

Ontario's regulatory framework also includes the *Professional Foresters Act*. The principal objective of this *Act* is to regulate the practice of professional forestry and to govern its members in accordance with the *Act*. While the *Professional Foresters Act* does not restrict a landowner's ability to cut trees on their property, it does affect practitioners of forestry whom they may hire for assistance.

The Incentive Component

To achieve healthy ecosystems, incentives are offered to promote the level of stewardship achieved inside the legislative framework. At the provincial level, the incentive component includes: the Managed Forest Tax Incentive Program (MFTIP) and Ontario Stewardship. Other programs and opportunities complement this framework and are accessible through conservation authorities, environmentally based non-government associations and municipalities.

Managed Forest Tax Incentive Program The MFTIP was introduced for the 1998 tax year to bring greater fairness to the property tax system by valuing forestland according to its current use. The program is designed to increase landowner awareness about forest stewardship. Participants in the program range from Essex County landowners looking after the fragmented natural landscape, to owners of shoreland in Muskoka, to large forest companies in northern Ontario contributing to the northern economy.

Landowners who apply and qualify for the program have their property classified under the Managed Forest property class described in Ontario Regulation 282/98 of the Assessment Act. The eligible property is then taxed at 25 per cent of the residential tax rate established by the municipality. The minimum property size for the program is 4 hectares (9.88 acres). Landowners participating in the program are required to prepare a Managed Forest Plan for their property and have it approved by an individual designated by MNR as a Managed Forest Plan Approver.

The area covered by approved Managed Forest Plans indicates the program's success and, to some degree, the amount of private forests being sustainably managed. The goal is to ensure there is no long-term decline in the forest area included in the program. In 2003, there were 10,385 properties and 720,616 hectares of land receiving benefits under the MFTIP (Table 3i). In comparison to 2001, this is a 11.8% increase in properties participating and a 17.8% increase in area participating.

Ontario Stewardship Ontario Stewardship was initiated in 1995 by the MNR to encourage greater landowner involvement in stewardship activities. Ontario Stewardship helps people find information, expertise, and funding to ensure good management occurs on private land. The program's strength lies in its stewardship councils which are volunteer groups of landowners and land interest agencies. Each stewardship council works with a MNR stewardship co-ordinator. Many stewardship councils have representatives from forest interests and the forest industry. Each council is reflective of the landscape it serves.

The MNR provides funding to each council to be invested in community level projects. This is often combined with funds from other groups, government ministries and foundations. Volunteer hours are tracked and reported to show the total amount invested in private land stewardship. Examples of projects include workshops on woodlot and wetland management, stream restoration projects, endangered species conservation and community tree planting.

Table 3i. Private forests managed under the Managed Forest Tax Incentive Program, by MNR region

MNR Region	Forest Area Under Management (hectares)			Number of Properties		
	2001	2002	2003	2001	2002	2003
Northeast Region	52,210	137,063	142,254	865	935	962
Northwest Region	180,206	180,430	181,398	115	118	121
Southern Region	379,157	391,364	396,964	8,309	8,846	9,302
Total	611,575	708,857	720,616	9,289	9,899	10,385

Reporting date - July 31st of the year specified

ONTARIO STEWARDSHIP COUNCIL FOCUS: THE RENFREW COUNTY STEWARDSHIP COUNCIL

Renfrew County has a long history of supporting a forest based economy. The industry generates \$184.9 million annually and supports over 4,500 jobs. The productive private land forest in Renfrew County exceeds 265,000 hectares and contributes to the industry's wood supply. Recognizing the importance of this industry, the Renfrew County Stewardship Council (RCSC) initiated a strategic planning process to identify and respond to resource based challenges in the county. In 2003-2004, the RCSC formed the *Forest Stewardship Committee of Renfrew County*.

In an effort to define Renfrew County's forest based economy and private land wood supply, the RCSC funded the research and preparation of a discussion paper on forestry in the county. The *Forestry Discussion Paper* is a benchmark that defines issues associated with the county's private land wood supply. It also offers a series of recommendations which will help in the development of future projects with community partners. An enhanced tree planting program, demonstration forest network and landowner extension program have already been implemented.

The Renfrew County Stewardship Council "promoting and encouraging private land stewardship and the sustainable use of natural resources in Renfrew County." For more information, visit <http://www.ontariostewardship.org>.

For additional information on Ontario Stewardship, visit their website at: <http://www.ontariostewardship.org>.

Other Private Land Initiatives

The MNR supports other initiatives that provide assistance to Ontario's private land owners including:

- An Extension Note series which provides information in an easy-to-understand format on topics related to land, water, wildlife, trees and property management. The notes are

Table 3j Summary of Ontario Stewardship accomplishments for 2003/04

Reporting Criteria	Measure
Council summary	
Number of stewardship councils	39
Number of council members (12/council)	500
MNR contribution (\$10,000/council)	\$400,000
Opportunity fund (\$)	\$235,000
Project summary (primary program area)	
Number of fish and wildlife projects	176
Number of forestry projects	153
Number of "other" projects	115
Total number of projects	444
Partner contributions to	
Number of volunteers	11,449
Number of volunteer hours	163,865
In-kind partner effort (\$)	\$5,327,393
Direct partner contributions (\$)	\$10,477,047
Total partner contributions (direct/indirect \$)	\$15,804,440

on the Ontario Forests website (<http://ontariosforests.mnr.gov.on.ca>). Other publications, of a more technical nature, are also available to landowners. Of particular note in 2003/04 is the Guide to Stewardship Planning for Natural Areas that was developed by MNR in collaboration with many stewardship organizations.

- The Eastern Habitat Joint Venture Program, where the MNR and partners actively conserve important wetland and upland habitats for the benefit of waterfowl, other wildlife and the public. Through this program, non-government partners offer technical and financial assistance to landowners for conservation projects.
- The Conservation Land Tax Incentive Program offers a reduction in property taxes to landowners agreeing to protect a natural heritage feature identified by the MNR on their property (e.g., provincially significant woodlands). For 2003, the program had approximately 15,000 properties participating, thereby conserving some of Ontario's most significant natural heritage features.

Chapter 4

Forest Access Roads

Most forest access roads on Crown land are planned, constructed, and paid for by the forest industry. The FMP for each management unit describes the location, construction, maintenance, and management of access roads that exist, or are planned for construction. These roads are essential for performing forest management activities. They also provide public access to provincial Crown land for tourism, outdoor recreation, mining, and other activities.

This chapter provides information on the construction of primary and secondary forest access roads. It describes road maintenance activities, including grading, snow ploughing, re-alignments, flood repairs, bridge repairs, and any other activity necessary to maintain existing roads. This chapter also reports on controlling access to roads, implementation of abandonment measures, and funding.

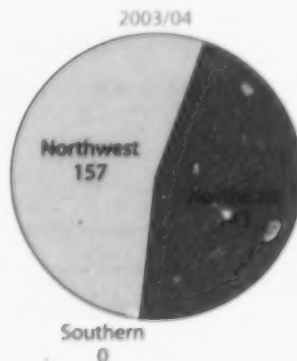
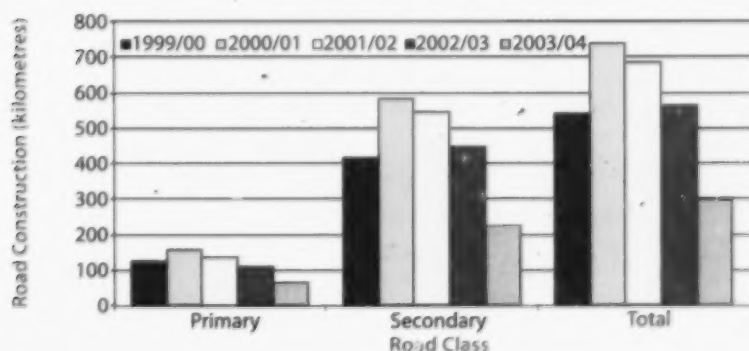
Road Construction and Maintenance

Figure 4a illustrates provincial road construction for a five year period from 1999 through 2004. Total primary and secondary road construction amounted to 300 kilometres in the current year.

Figure 4b illustrates total provincial road maintenance for a five year period from 1999 through 2004. Road maintenance efforts have remained relatively stable (currently at 18,096 km) in comparison to the previous year.

In 2003-2004 the Forest Access Road Program, funded by the MNR and the Ministry of Northern Development and Mines, invested \$4.43 million in the reconstruction and maintenance of forest access roads in Ontario. Most of the road work funded by the two ministries serves several purposes, including public access and forest management.

Figure 4a Road construction by road class and MNR region



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Figure 4a: Provincial Road Construction by Road Class, 1999/00 to 2003/04

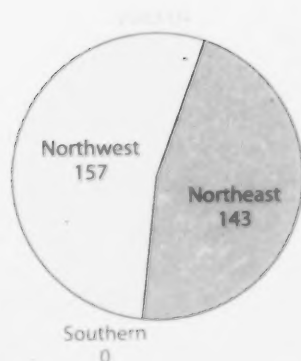
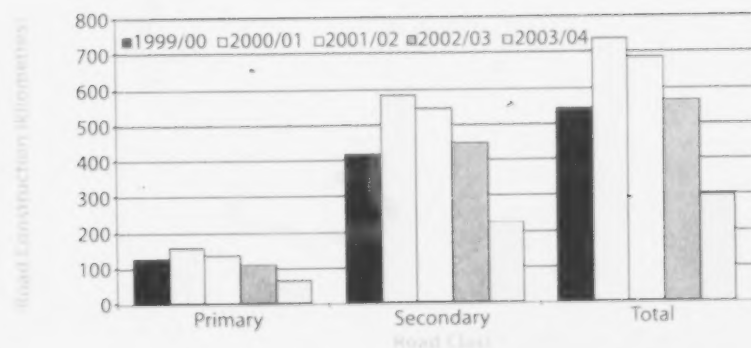
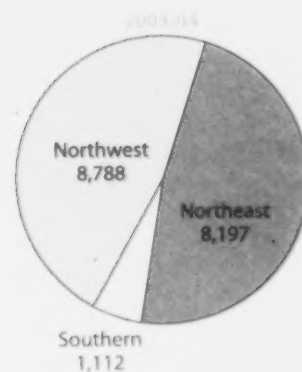
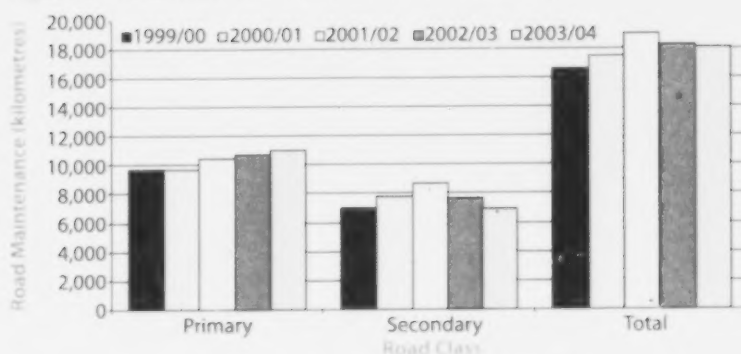


Figure 3b: Road programming by road class and MMP report



Road Access Control and Abandonment

For reasons of public safety and/or resource management, forest access roads may be closed to certain uses on a temporary, seasonal, or permanent basis. Methods used to control access can generally be classified into two categories: erecting signs to advise the public of the restriction (referred to as signage); or, installing gates or using other physical means such as ditching (referred to as gated or physical barrier). Road access control and abandonment must be

planned in advance of construction, and documented in the FMP for each management unit. These activities must also be reported in the management unit annual report.

Figure 4c illustrates the length of primary and secondary forest roads that had controlled access for a five year period from 1999 through 2004. In 2003-2004 there were 4,382 km of roads with controlled access. In general, there has been an increase in the use of access controls over the five year period.

Figure 4d illustrates the total length of primary and secondary forest access roads that were aban-

Figure 4c: Road access control by road class and MMP report

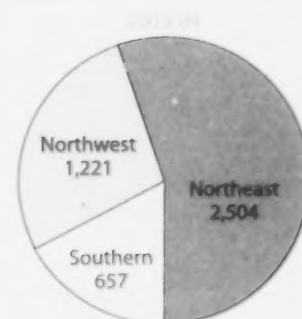
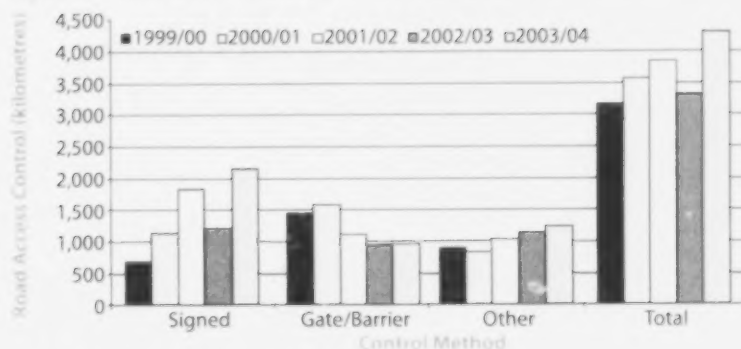


Figure 4d: Road abandonment by road class and MMP report

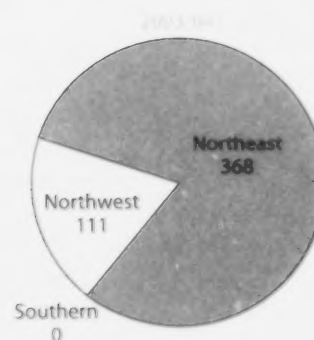
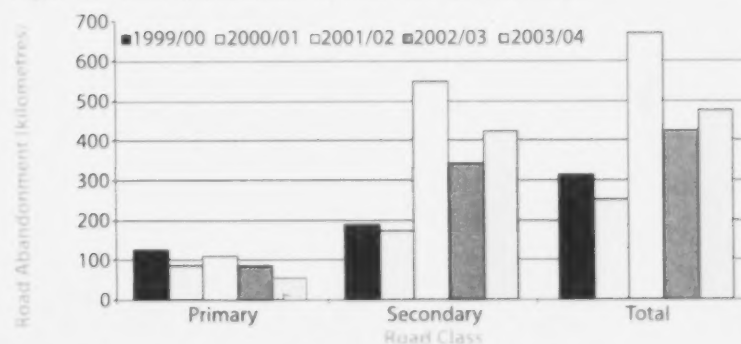
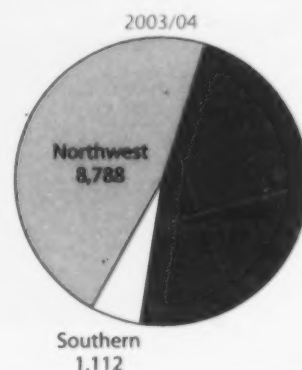
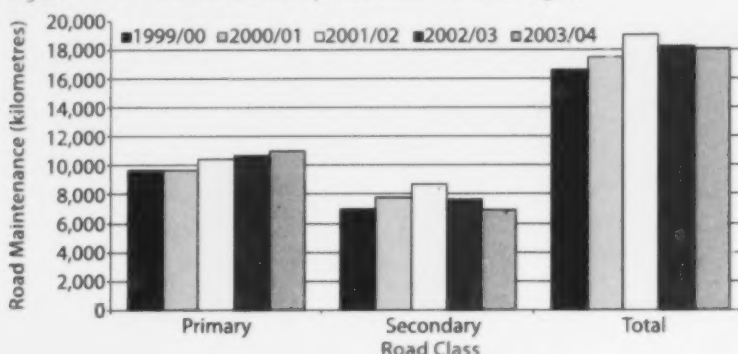


Figure 4b Road maintenance by road class and MNR region



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Figure 4c Road access control by control method and MNR region

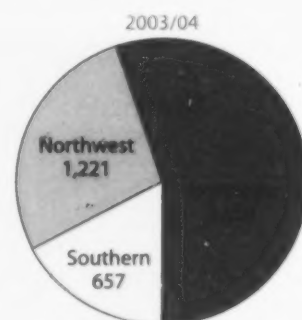
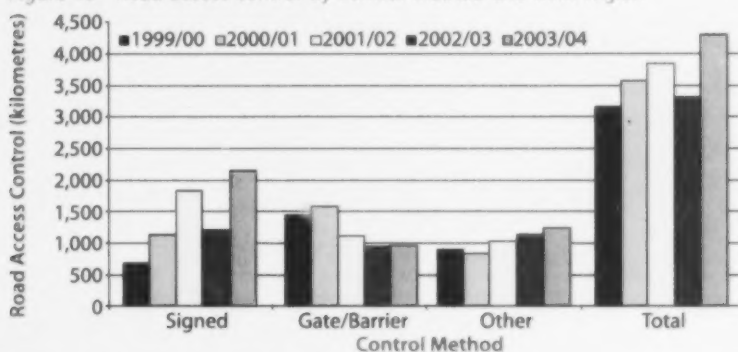
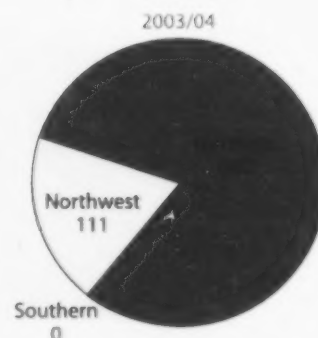
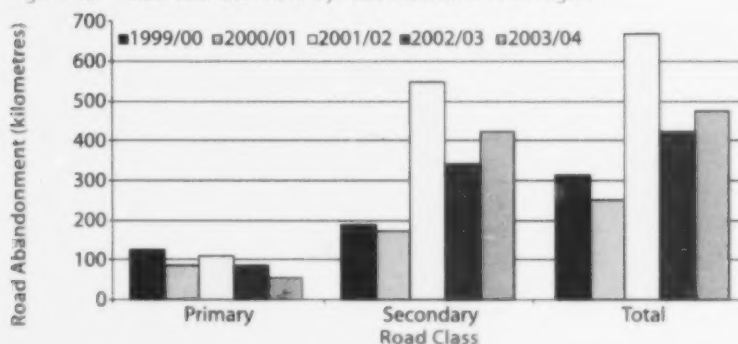


Figure 4d Road abandonment by road class and MNR region



ACCESS CONTROL

- The closure of a road to public travel or the restricted access to a road for certain specified uses for given periods of time.

Road Abandonment is the use management strategy adopted when a road has fulfilled its original use and is no longer required, or when maintenance cannot be justified.

Natural Abandonment is the natural degradation of a road when it is not maintained. Road maintenance has ceased and steps are not taken to prevent the use of the road by vehicular traffic through means of physical disablement.

Physical Abandonment is a deliberate act to render a road unusable by vehicular traffic. For example: gating, ditching, bridge or culvert removal.

ROAD CLASSES

Primary Roads are essentially permanent roads. They are regularly maintained with a life expectancy in excess of 15 years.

Secondary Roads are essentially branches off primary roads. They are not considered permanent and are not normally maintained beyond their five to fifteen year period of use.

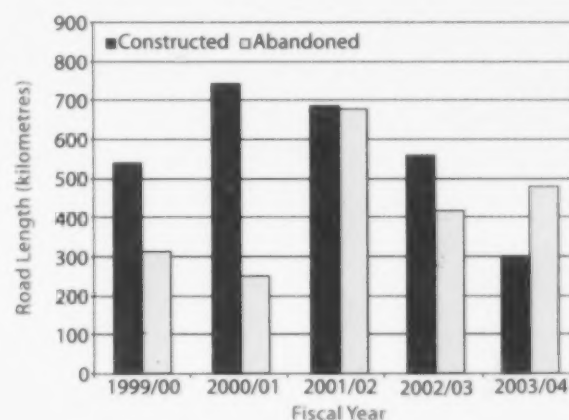
Tertiary Roads are built for short-term use (i.e., up to five years). They are not normally maintained beyond their period of use.

Note: During 2003-2004 changes in road definitions and terminology began to be applied. Use of the new terminology did not appear in annual reports at this time, however for planning purposes the term 'branch roads' began to replace 'secondary roads', and 'operational roads' began to replace 'tertiary roads'.

done for a five year period from 1999 through 2004. There was no reported physical road abandonment in the Southern Region, however, many roads in this region are abandoned naturally. In the two northern regions there were 479 km of physically abandoned roads in 2003-2004.

Figure 4e shows a comparison of total provincial forest access road construction and abandonment over the last 5 years. In the current fiscal year, 179 km more roads were abandoned than were constructed.

Figure 4e Road construction and abandonment



Chapter 5

Forest Disturbance and Harvest

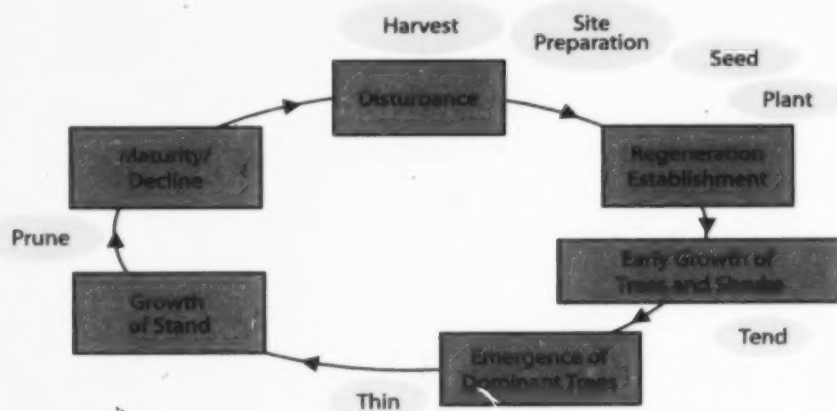
Natural disturbances¹ such as insects, diseases, severe weather events and forest fires occur throughout the life cycle of the forest, as illustrated in Figure 5a.

Figure 5a The forest life cycle

LEGEND



Optional Treatment



Forest disturbances (except for diseases) are measured both by area (hectares) and volume (cubic metres) of trees killed, damaged, or harvested. Losses to tree diseases are normally chronic, and are estimated by calculating an annual average volume loss for all chronic diseases. Area affected is not recorded for chronic diseases.

All estimates of disturbance area, both for the province and for the Area of the Undertaking (AOU), encompass all forest lands, including Crown forests, federal and private forest lands, and federal and provincial parks. Estimates for AOU disturbance

volume, however, are based on Crown production forest lands only.

Forest inventory descriptions are changed when stands are impacted by disturbance. However, the

degree of disturbance impact required before the inventory description is changed is a subjective decision. The most significant disturbances are reported in the fall of the year following a disturbance. *Many disturbances reported in this 2003/04 report actually occurred during 2002/03. Reporting is delayed to allow time to completely map and inventory all disturbances that occurred during a given year.*

¹ Natural disturbance impacts are reported for both Crown and private land within the Area of the Undertaking. Harvest area is reported for Crown land only.



Chapter 3

Forest Disturbance and Harvest

Natural disturbances¹ such as insects, diseases, severe weather events and forest fires occur throughout the life cycle of the forest, as illustrated in Figure 5a.

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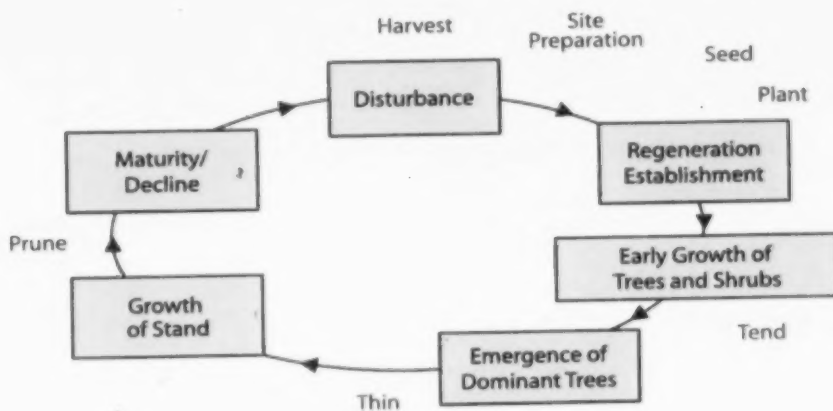
Forest inventory descriptions are changed when stands are impacted by disturbance. However, the

Figure 5a: The forest life cycle

LEGEND

Natural Evolution

Optional Treatment



Forest disturbances (except for diseases) are measured both by area (hectares) and volume (cubic metres) of trees killed, damaged, or harvested. Losses to tree diseases are normally chronic, and are estimated by calculating an annual average volume loss for all chronic diseases. Area affected is not recorded for chronic diseases.

All estimates of disturbance area, both for the province and, for the Area of the Undertaking (AOU), encompass all forest lands, including Crown forests, federal and private forest lands, and federal and provincial parks. Estimates for AOU disturbance

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Natural Disturbances

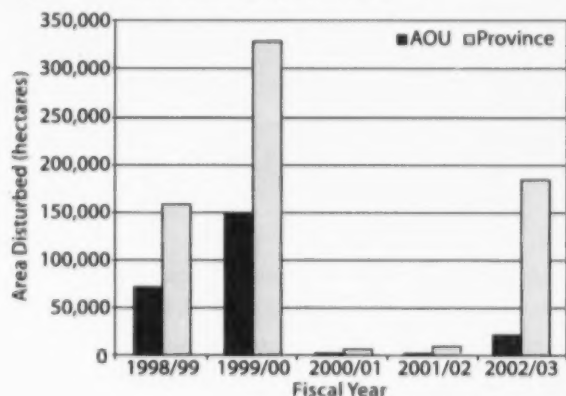
Natural disturbances include fire disturbances, and damage from insects, disease, and severe weather conditions. The intensity of these disturbances varies annually.

Forest Fires

The MNR records the area and volume disturbed by forest fires across all the forested area of Ontario.

The number and size of forest fires varies dramatically year to year, depending on the weather. This variability is particularly noted in Figure 5b, where the last five years of provincial fire disturbance are shown. Fire activity in fiscal year 2002-2003 was moderate with 177,497 ha burned throughout the province, resulting in an estimated volume loss of just over 3 million cubic meters. Depending on the severity of the damage to trees from fire, it is often possible to conduct salvage activities in burned areas to harvest dead or damaged trees. These operations are reported as harvesting, and discussed later in this chapter.

Figure 5b Area disturbed by forest fire



Insects, Disease, Severe Weather

Estimates of area affected and wood volumes lost from 1998-1999 through 2002-2003 due to insects, disease, and severe weather are based on studies completed by the Forest Health Monitoring partnership between the Canadian Forest Service and the MNR. Depending on the severity of damage to trees from these disturbances, it is often possible to conduct sal-

vage operations in disturbed areas to harvest timber and reduce economic losses and the threat of forest fires.

Insect Damage

The damaged area and volume loss caused by the most destructive insects are based on estimates of forested areas where 30 percent or more of the foliage was removed. Usually, a number of years of repeated defoliation is required to kill a tree. This varies for each pest, the tree species being attacked, and other factors. Forested areas may be defoliated by more than one insect. Area reported as defoliated may include different degrees of severity.

Area The total area infested by forest insects where growth loss and/or tree mortality has occurred for the last 5 years is presented in Figure 5c. Insect infestation area within the province where growth loss occurred was at a moderate level during the fiscal year 2002-2003 at just over 8.3 million hectares, while the area where tree mortality occurred was low at 143,420 hectares.

Volume Insects causing significant damage to Ontario's forests include the spruce budworm, the jack pine budworm, the forest tent caterpillar, the gypsy moth, and a number of insects that chronically attack poplar and white birch. The estimated volumes lost in the AOU between 1998-1999 and 2002-2003, due to growth losses and mortality caused by damage from these insects, is reported in Table 5a. Spruce budworm and forest tent caterpillar continue to account for the majority of the mortality that occurs. In 2002-2003 an estimated 1,965,380 cubic meters of volume was lost to insects within the AOU. During 2002-2003, the majority of the estimated loss was in the growth of the impacted trees (1,923,958 cubic meters) whereas only 41,422 cubic meters of volume was lost due to tree mortality.

Diseases

The change in area and volume in a forest stand that results from natural mortality every year is not usually significant enough to be recorded for inven-

Figure 5c Area infested by forest insects

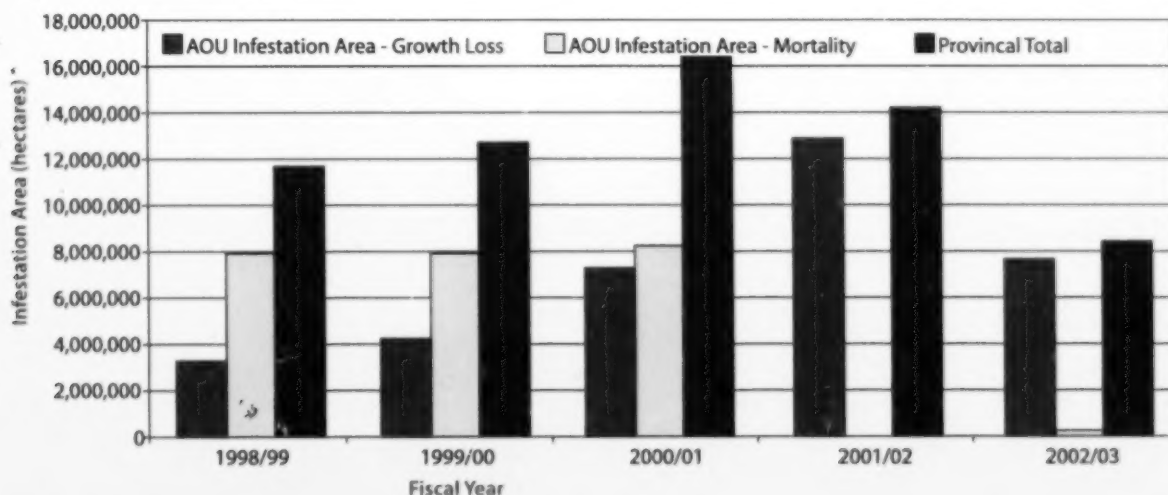


Table 5a Estimated wood volumes lost to insects within the AOU

Insect	Volume Loss (cubic metres)				
	1998/99	1999/00	2000/01	2001/02	2002/03
Spruce Budworm	5,208,468	3,921,618	4,215,458	99,760	305,277
Jack Pine Budworm	0	0	0	0	0
Forest Tent Caterpillar	564,622	848,682	1,693,114	2,347,325	1,604,942
Gypsy Moth	0	21	0	1,725	42,019
Other Poplar/Birch Insects	40,847	168,394	15,860	3,443	13,143
Other Insects	0	284	0	0	0
Total	5,813,937	4,938,999	5,924,431	2,452,253	1,965,380

tory update purposes. For example, chronic diseases such as root rot may kill only a few trees scattered throughout a forest stand. Therefore, no area loss is recorded for most diseases. However, an estimate of the volume of wood in the dead trees and volume of growth loss in the remaining live trees is made. Volume estimates of the effects of chronic disease consist of growth and mortality losses caused by rot, stem decay, and foliage dieback.

Provincial Volume The estimated growth losses to disease for the last 5 years, has been relatively stable, at approximately 12-13 million cubic metres lost annually. Volume losses to tree mortality from disease have been generally decreasing to 3,526,722 cubic meters for 2002-2003.

AOU Volume As shown in Table 5b, estimated annual volume losses from disease in the AOU in 2002-2003 were just over 12 million cubic metres. Growth loss from decay amounted to just over 4.6 million cubic metres in 2002-2003, while root rot mortality was over 3.5 million cubic metres.

Severe Weather

Windstorm damage (commonly referred to as "blowdown"), drought, and cold weather damage (ice/snow/severe cold) are the most common weather disturbances causing significant tree mortality and volume losses. Windstorms occur periodically, but must affect a sizeable area to be recorded. The estimates for windstorm damage are reported by individual management units, and are not part of the

Table 5b Estimated wood volumes lost to disease within the AOU

Disease Type	Volume Loss (cubic metres)				
	1998/99	1999/00	2000/01	2001/02	2002/03
Volume Loss - Growth					
Decay	4,298,096	4,298,096	5,028,122	4,959,800	4,609,238
Dieback	1,457,322	1,457,322	1,547,164	1,494,351	1,500,665
Hypoxylon	2,032,607	2,032,607	2,093,934	2,026,317	2,045,153
Root Rot	266,519	266,519	235,040	222,525	222,525
Aspen Decline	0	48,623	32,954	133,511	104,359
Volume Loss - Mortality					
Root Rot	4,742,753	4,742,753	4,318,832	4,109,611	3,526,722
Stillwell Syndrome	1,711,531	0	0	0	0
Total Volume Loss	14,508,828	12,845,920	13,256,046	12,946,115	12,008,663

estimates provided by the Forest Health Monitoring partnership.

Area The area reported as being damaged by severe weather between 1998-1999 and 2002-2003 is shown in Figure 5d. The total provincial area damaged in 2002-2003 was just over 2.7 million hectares, leading to a loss of over 28.2 million cubic meters of volume, see Table 5c. Most of the volume loss was due to either

windstorm damage (62% of losses), or cold weather damage (37% of losses).

Forest Harvest

The level of allowable harvest in a management unit is determined through the forest management planning process. The MNR requires that the allowable harvest for a management unit be set at a level that

Figure 5d Area damaged by severe weather

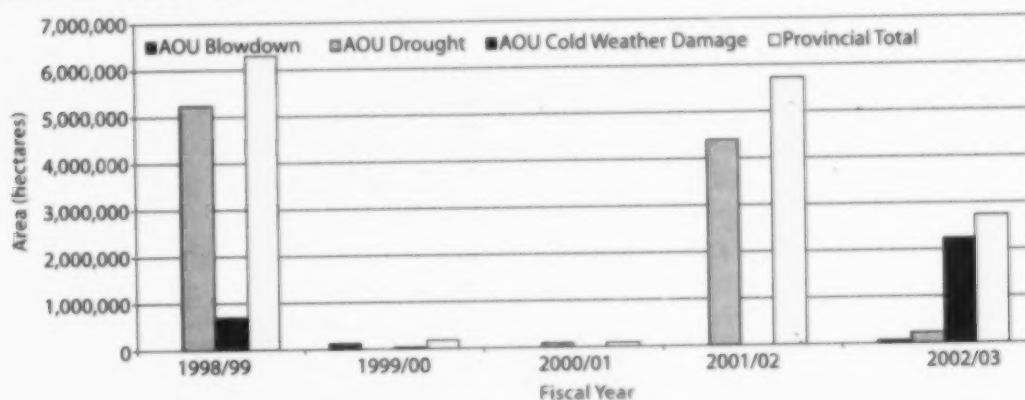


Table 5c Estimated wood volumes lost to severe weather within the AOU

Disturbance Type	Volume Loss (cubic metres)				
	1998/99	1999/00	2000/01	2001/02	2002/03
Blowdown	0	13,242,128	286,022	97,824	17,450,882
Drought	224,020	0	62,593	7,589,677	238,817
Cold Weather Damage	47,191	68,626	0	0	10,553,412
Total	271,210	13,310,753	348,615	7,687,501	28,243,111

will sustain a healthy forest over time. Harvesting in each management unit is controlled and monitored according to the approved FMP. The FMP specifies both the allowable harvest area and the associated volumes. However, control of the allowable harvest is by area.

Natural Disturbance Pattern Emulation

The fundamental principle in emulating natural disturbance is to harvest and regenerate Ontario's forests in more natural patterns, ensuring that the needs of wildlife species are met and healthy diverse ecosystems with their many benefits are passed on to future generations. Under the CFSA and subsequently with the publication of the *Forest Management Guide for Natural Disturbance Pattern Emulation* (NDPE Guide) in 2001, Ontario has been changing its forest practices so that forest biodiversity and natural processes are more proactively maintained. This is accomplished, in part, by emulating as closely as possible the landscape patterns (i.e. variation in size and shape) produced by forest fires, most notably during the implementation of the clearcut silvicultural system in the boreal forest. At the same time, MNR acknowledges that harvesting does not emulate all the effects of forest fires.

While forest harvesting can never exactly duplicate natural disturbances in the forest, the NDPE Guide promotes timber harvesting practices that emulate the natural range and pattern of fire disturbances - both small and large. This variation in harvest pattern creates desirable habitat for wildlife species. Smaller disturbances favour the creation of habitat for species such as moose, black bear and ruffed grouse, because this size of disturbance creates a lot of "edge" (where different forest types, features, or age classes come together). Larger disturbances, over time, create habitat for species which prefer large, uniform forests, such as the American marten, the woodland caribou, and the great grey owl. Wildlife species have evolved in forest patterns that have largely been shaped by wild-fire. Therefore the widest possible range of wildlife species will benefit by emulating the broadest range of natural disturbance patterns.

Silvicultural Systems Used in Ontario

Harvesting in Ontario is one of a series of actions that, when combined with other actions of forest renewal and maintenance (e.g., tending, protection, etc.) represents a silvicultural system. These systems are classified according to the method of harvesting. Ontario uses three silvicultural systems: selection, shelterwood, and clearcut.

Selection Silvicultural System

Mature, unhealthy or undesirable trees are continuously removed individually or in small groups over an entire area, throughout the forest life cycle. This method produces stands with trees of different ages and is referred to as uneven-aged management.

Shelterwood Silvicultural System

Mature trees are harvested in a series of two or more cuts to encourage natural regeneration and growth under or next to the residual trees. This is done by cutting trees uniformly over the stand area or in groups or narrow strips. Stands with trees approximately the same age are produced with this system.

Clearcut Silvicultural System

The volume available from areas harvested under this system is usually harvested in one operation. Individual trees within the harvest area and/or parts of forest stands are retained for silvicultural reasons (e.g., seed trees) or to provide protection for forest values (e.g., marten habitat and cavity dwelling birds). Regeneration methods used can be natural, assisted (e.g., planting) or a combination of both methods. This method produces stands where most of the trees are at about the same age, and is referred to as even-aged management.

Average and Maximum Size of Clearcuts

The CFSA requires "using forest practices that within the limits of silvicultural requirements, emulate natural disturbances and landscape patterns while minimizing adverse effects on plant life, animal life, water, soil, air, and social and economic values, including recreational values and heritage values". The Timber Class EA approval provides for

a range of clearcut sizes, not to exceed 260 hectares, unless supported by sound biological or silvicultural reasons. It also recognizes that a range of clearcut sizes is required. Efforts to provide a range of disturbance sizes have resulted in some planned clearcuts being larger than 260 hectares, with appropriate rationale provided in FMPs.

Cut patterns, sizes, and distribution are developed based on the applicable forest management guides in accordance with natural conditions, historical disturbance and landscape patterns, forest types, silvicultural characteristics of tree species, and fish and wildlife habitat needs. When appropriate, forest management operations within cut blocks are further altered or prohibited to protect identified site-specific forest values by implementing measures (e.g., reserves and harvest restrictions) specified in the guides.

The NDPE Guide provides direction to forest managers on designing harvest areas to more closely resemble natural disturbances by leaving more standing trees, as individuals and as peninsular and insular patches, scattered throughout irregularly-shaped harvest areas. It also contains guidance for measuring clearcut size. This Guide will be implemented on individual management units over five years as new FMPs are prepared, and began with plans approved for implementation in 2003.

In this report, the area statistics for average and maximum size clearcuts often refer to the area cut in a particular year, without consideration of harvests in previous years or nearby clearcuts. The use of a consistent method of measuring and reporting clearcuts, including consideration of contiguous harvest from year to year, will improve in future reports as the NDPE Guide is implemented. Meanwhile, until clearcuts are measured and reported consistently throughout the province following the direction in the NDPE Guide, comparison of the average and maximum clearcut sizes between management units may not be valid.

Condition 32 (b) of the EA declaration order requires a summary of the size and frequency parameters of clearcuts. In previous annual reports size parameters for clearcuts have been reported, but this is the first annual report where frequency parameters are reported.

Boreal Forest Other key forest management guides used to design clearcut sizes and patterns within the Boreal Forest include: *Timber Management Guidelines for the Provision of Moose Habitat* and *Forest Management Guidelines for the Conservation of Woodland Caribou : A Landscape Approach*.

The provision of moose habitat includes direction for range management and specific stewardship for values such as aquatic feeding areas. In northwestern Ontario, in locations where significant woodland caribou populations occur, application of the woodland caribou guide takes precedence over application of the moose habitat guide for determination of clearcut size.

In 2002-2003, 41 management units within the Boreal Forest reported average clearcut sizes ranging from 21 to 1,987 hectares. Maximum clearcut sizes reported ranged from 73 to 12,483 hectares.

In 2003-2004, 34 management units within the Boreal Forest reported average clearcut sizes ranging from 34 to 1,447 hectares. Maximum clearcut sizes reported ranged from 77 to 6,085 hectares. There were 1,232 clearcuts in 2003-2004, 102 of these were larger than 260 hectares.

Great Lakes-St. Lawrence Forest In the Great Lakes-St. Lawrence forest, the primary stand-replacing natural disturbance agents have been a combination of wind and fire events. Through an ecosystem management approach to landscape-level management, forest managers attempt to address the habitat requirements of many wildlife species. The specific habitat requirements of selected species are also considered. Some species, such as pileated woodpecker, are area sensitive and need large blocks of forest. Other species such as white-tailed deer prefer small patches and an abundance of edge habitat. Some species, such as moose, require a complex mosaic of forest types and ages. To provide for a diversity of habitat needs when planning for forest harvest, a variety of harvest area sizes must be employed.

Over the past five years in the Great Lakes-St. Lawrence forest, the selection silvicultural system has been used in approximately forty five percent of the area harvested. The shelterwood silvicultural system has been employed in about thirty five percent of the

area harvested. The clearcut silvicultural system has been used in the remaining twenty percent of the area harvested the Great Lakes-St. Lawrence forest type.

For the clearcut silvicultural system in 2002-2003, 9 management units within the Great Lakes-St. Lawrence Forest reported average clearcut sizes ranging from 5 to 135 hectares. Maximum clearcut sizes ranged from 26 to 550 hectares.

In 2003-2004, seven management units within the Great Lakes-St. Lawrence Forest reported average clearcut sizes ranging from 10 to 72 hectares. Maximum clearcut sizes ranged from 28 to 228 hectares. There were 172 clearcuts in 2003-2004, none of the reported clearcuts were larger than 260 hectares.

Harvest Area

The area harvested annually using the three silvicultural systems, from 1998-1999 through 2002-2003, is shown in Figure 5e. Total area harvested using the clearcut silvicultural system increased by almost 34,000 hectares (19.5%) in 2002-2003 to 216,161 hectares.

Area harvested using both the shelterwood and selection systems increased by about 1,740 hectares and 725 hectares respectively.

Figure 5f illustrates the total provincial area harvested from 1998-1999 through 2002-2003, and includes a summary by MNR region for 2002-2003. The total harvest area increased approximately 18 percent during 2002-2003, to 230,729 hectares, a 5-year high, reflecting variations in factors such as market conditions, utilization, and forest access.

The pattern of harvest across the province remained the same as in previous years with the Northeast Region having the largest regional harvest area (48%), while the Northwest Region was second (42%). The Southern Region, which has a much smaller forest area, had the lowest regional harvest at 9% of the total provincial harvest.

Figure 5g shows the total harvest area from 1998-1999 to 2002-2003 compared to the provincial area disturbed by fire for the same period. In 2002-2003 the area harvested was 1/3 more than the area burned².

Figure 5e Area harvested by silvicultural system

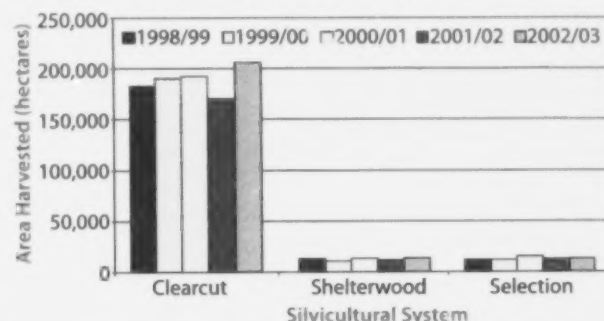


Figure 5f Area harvested by fiscal year and MNR region during 2002-2003

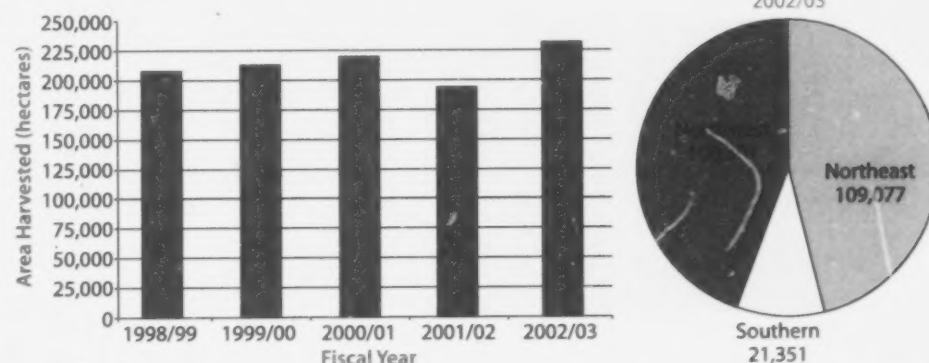
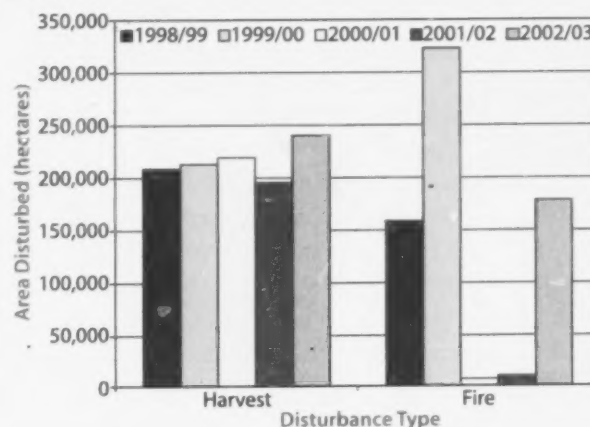


Figure 5g Forest area disturbed by harvest and fire for all Crown land



² The harvest area is limited to the AOU, while the area burned is for the whole province.

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Figure 5e: Area Harvested by Silvicultural System

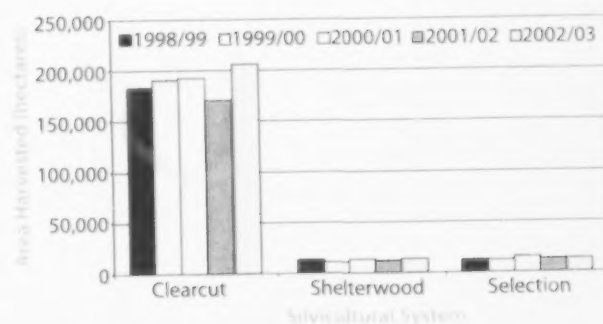


Figure 5f: Provincial Area Harvested by MNR Region (2002-2003)

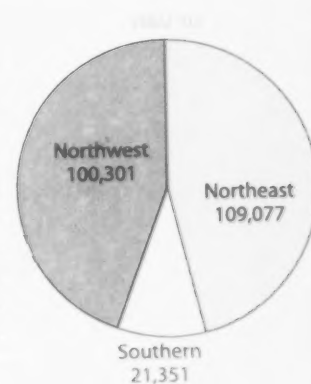
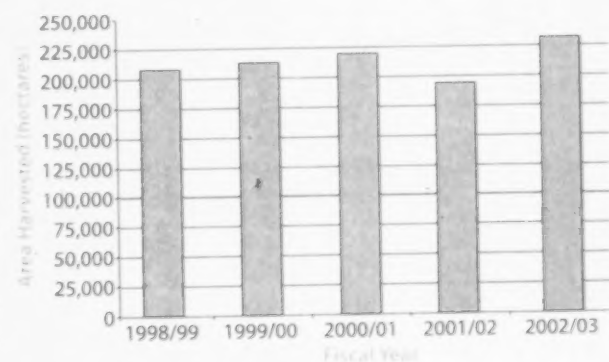
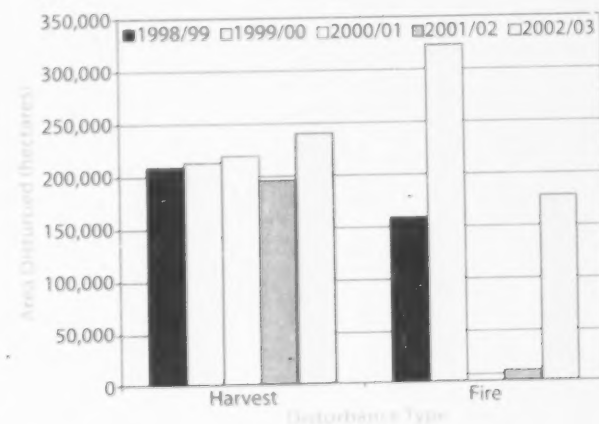


Figure 5g: Provincial Area Harvested by Disturbance Type (2002-2003)



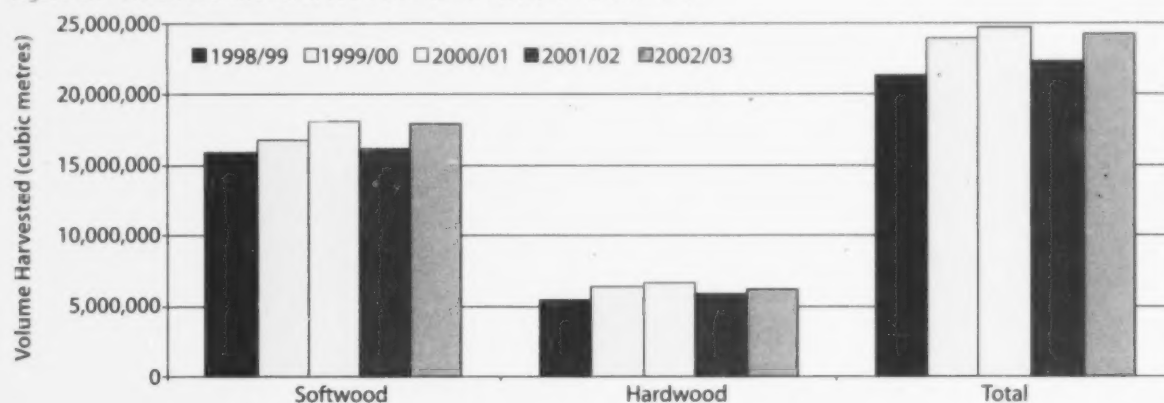
² The harvest area is limited to the AOU, while the area burned is for the whole province.

When large areas are burned by fire or destroyed by windthrow or insects, forest companies often harvest some of the remaining dead and damaged wood. This salvage harvest is usually carried out a year or two following the disturbance. In 2002-2003 there was a large increase in the amount of salvage harvest. A total of 31,749 hectares were salvaged, up from 14,258 in the previous fiscal year. The increase in salvage is reflective of the recovery of losses from fire and blowdown which occurred during the same period.

Harvest Volume

Total provincial softwood and hardwood volumes harvested from 1998-1999 through 2002-2003 are illustrated in Figure 5h. In 2002-2003, the total provincial harvest volume was approximately 24.2 million cubic metres, an increase of approximately 9% from the previous year's harvest volume. However the harvest in 2002-2003 was only 4.9 percent higher than the average harvest over the previous 4 years.

Figure 5h Hardwood and softwood volumes harvested on Crown land



The volume of wood harvested per hectare fluctuates due to changes in the types of stands harvested, delayed delivery of wood stored in the bush to mills, increased utilization, and/or changing market conditions. In 2002-2003 the average volume harvested was 102.5 cubic metres per hectare.

Wood volumes harvested in 2002-2003 in the MNR's three regions are shown in Figure 5i. The 2002-2003 regional harvest volumes were: 11.3 million cubic metres, or 46.6 percent of the total harvest volume in the North-

west Region; 11.6 million cubic metres, or 47.8 percent of the total harvest volume in the Northeast Region; and, 1.4 million cubic metres, or 5.6 percent of the total harvest volume in Southern Region. Softwood tree species accounted for 74.3 percent of the total harvest volume, with a harvest of approximately 18 million cubic metres. The hardwood harvest volume of approximately 6.2 million cubic metres accounts for 25.7 percent of the provincial harvest total.

The harvest volumes by individual species for 1998-1999 through 2002-2003 are shown in Table 5d. Ontario's forest harvest in 2002/03 increased approximately 9 percent over the previous year, with increased harvest levels of all species. Fluctuations in the harvest volumes of individual tree species from year to year are largely due to changes in market demand, and variations in the species encountered on the areas harvested.

Figure 5i Wood volume harvested by MNR region and species group, 2002-2003

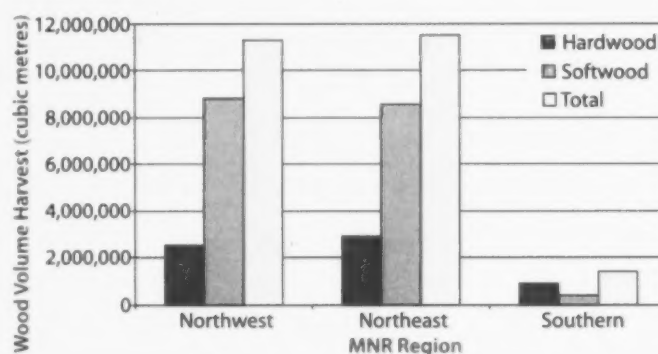


Table 5d Harvest volume by species (cubic metres)

Softwood Species	1998/99	1999/00	2000/01	2001/02	2002/03
White Pine	424,809	516,599	449,083	402,704	486,547
Red Pine	227,787	220,199	227,808	237,374	208,970
Jack Pine	5,951,814	6,010,056	6,322,585	5,733,221	6,255,812
Spruce	8,631,293	10,223,621	10,356,660	9,327,686	10,330,575
Hemlock	15,885	20,398	26,511	21,430	32,482
Balsam Fir	524,840	623,963	670,184	527,790	621,238
Cedar	11,872	34,339	26,783	16,877	26,424
Larch	24,295	21,976	28,054	30,114	34,483
Other Softwoods	2,161	17	97	0	0
Total Softwoods	15,814,756	17,671,169	18,107,765	16,297,195	17,996,530
Hardwood Species	1998/99	1999/00	2000/01	2001/02	2002/03
Maple	451,308	483,993	590,307	471,533	584,766
Yellow Birch	35,929	30,044	47,859	38,893	45,915
White Birch	270,027	305,878	409,062	390,313	457,035
Oak	39,226	31,976	38,968	29,365	36,028
Beech	30,742	26,812	36,132	26,981	38,821
Poplar	4,594,011	5,509,840	5,540,861	4,946,318	5,056,319
Basswood	12,981	12,534	18,639	11,745	11,888
Ash	3,134	3,228	5,583	3,463	3,516
Other Hardwoods*	45,116	790	1,588	1,088	2,135
Total Hardwoods	5,482,474	6,405,093	6,689,000	5,919,699	6,236,424
Provincial Total	21,297,230	24,076,262	24,796,764	22,216,894	24,232,954

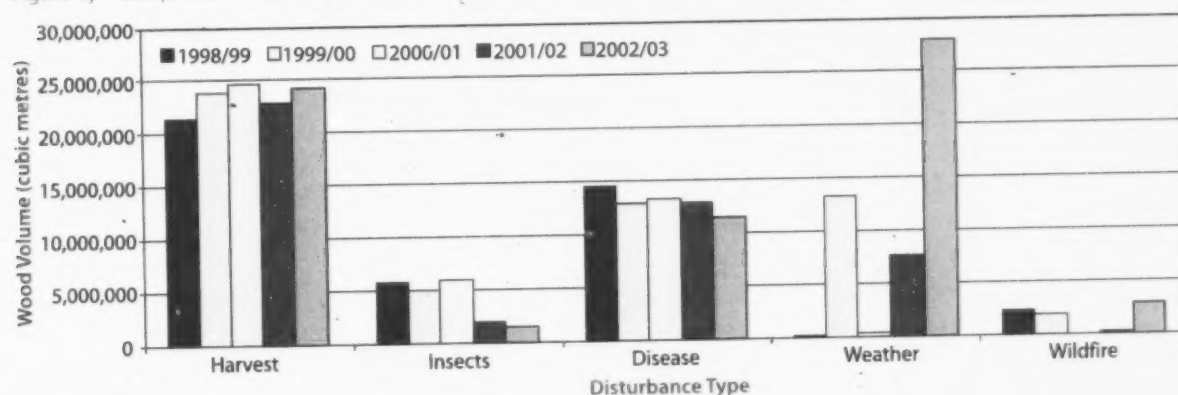
* The volumes for black cherry, ironwood, butternut, and elm are too small to be shown individually. They have been added together under Other Hardwoods.

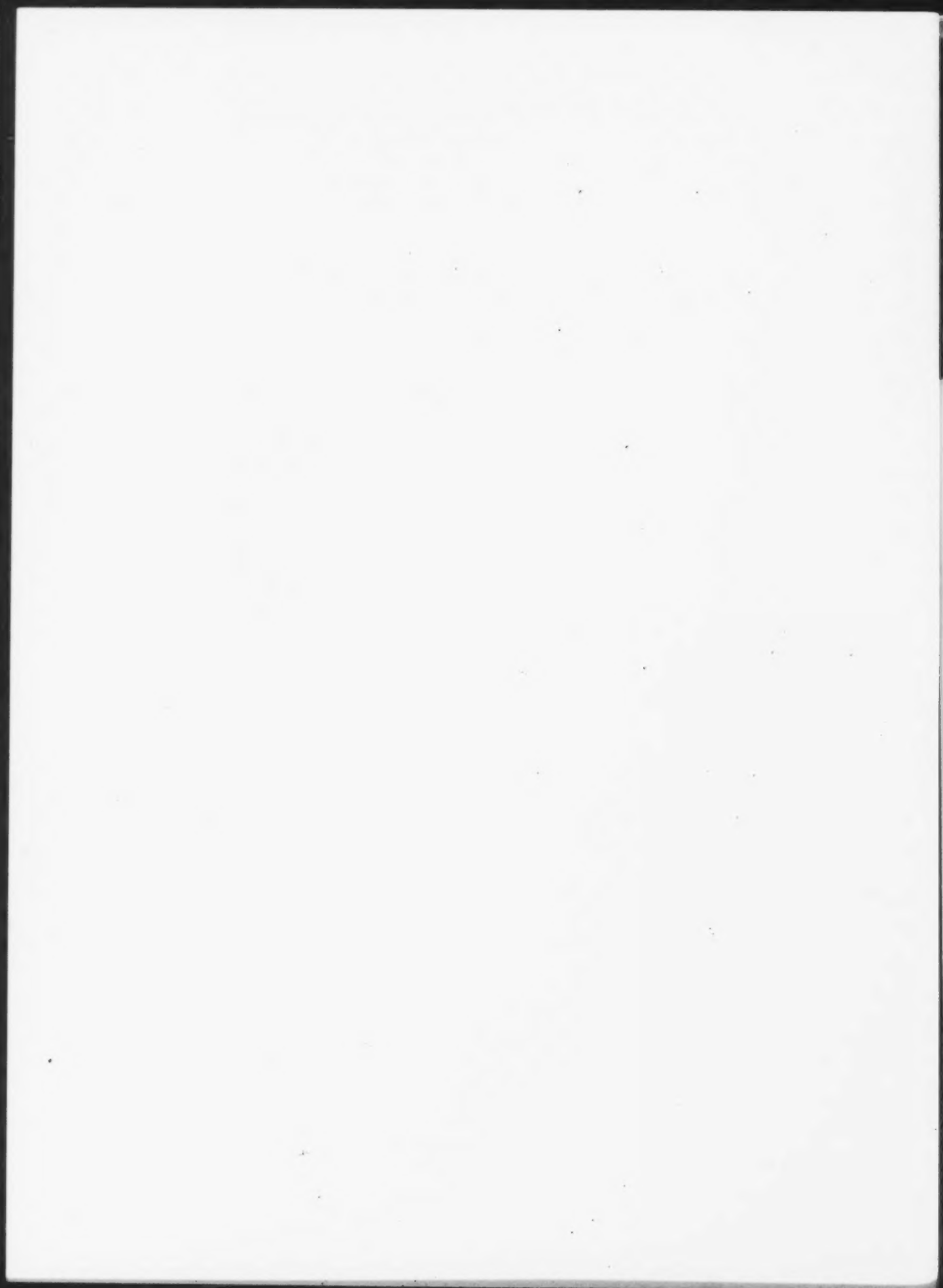
Harvest Volume Compared to Other Disturbances

A comparison of wood volumes affected by natural and human disturbances to the forest, including insects, disease, weather, wildfire and harvest, are shown in Figure 5j for the five-year period from 1998-1999 to 2002-2003. Over this time frame the effects of weather and wildfire were variable, while wood

volume lost to disease has been relatively constant. Fire volume losses were highest in 2002-2003 at approximately 3.0 million cubic metres, and losses due to severe weather (a combination of blowdown and cold weather) were also very high at 28.2 million cubic meters. Harvest volumes increased in 2002-2003 as companies increased their salvage efforts and responded to market fluctuations.

Figure 5j Comparison of harvest volume to volumes affected by other disturbances







Chapter 6

Forest Renewal and Maintenance

Under the terms of the CFSA, forest managers are responsible for fully renewing the forests where they operate. Sustainable Forest Licence (SFL) holders must ensure that areas harvested are renewed to the silvicultural standards established in FMPs, to ensure the long-term health of Crown forests. Long-term forest health is also promoted by forest maintenance operations. These operations include tending carried out to improve the survival, growth, or quality of a regenerating forest, and protection operations carried out to manage or prevent the damage caused by forest insects and diseases.

Forest Renewal

Activities needed to ensure the successful regeneration of all harvested areas are specified in all approved FMPs in Ontario. Crown forests are renewed by both assisted and natural regeneration techniques, and these activities are reported annually.

Planting and seeding are the two most common types of assisted regeneration. Planting includes planting of bareroot and container seedlings. Container seedlings now comprise over 95 percent of the stock used in planting programs across Ontario. Seeding may be carried out directly from aircraft or by broadcast seeders on the ground. Renewal activities also include preparing an area disturbed by harvest or natural causes for regeneration through mechanical or chemical means, or by prescribed burning. The regeneration establishment period,

from harvest to completion of the planting or seeding, can take up to five years.

Many tree species can re-establish themselves on a site without planting or seeding. These natural mechanisms include seeding from the adjacent forest or from cones left on site after the harvest (jack pine), suckering of stumps and roots (poplar), and continued growth of young trees remaining on the harvested area (black spruce). This natural regeneration can be enhanced through careful selection of the silvicultural system and harvest method (see Chapter 5).

In the past, reporting of natural regeneration annually at the time of harvest was not emphasized because some forest managers preferred to report it periodically after regeneration surveys had been completed. This delay in reporting, plus the regeneration establishment period, has in the past resulted in the reported annual renewal levels being substantially less than the reported annual harvest levels. With new reporting procedures introduced in 1996, natural regeneration is now reported promptly upon completion of the harvest.

Forest renewal operations were conducted on 186, 715 ha of Crown land in 2003-2004, see Figure 6a. The area renewed in 2003-2004 includes treatments on areas harvested or naturally depleted in 2002-2003 or earlier.

The choice of silvicultural system or harvest method used is largely dependent on the biological requirements of the different tree species (see Chapter 5, Forest Disturbance and Harvest). Regeneration

Table 6a Provincial renewal operations, 2003-2004

REGENERATION	Northwest	Northeast	Southern	Total
UNEVEN-AGED MANAGEMENT				
Selection system (hectares)		773	7,890	8,663
Subtotal uneven-aged management		773	7,890	8,663
EVEN-AGED MANAGEMENT				
Natural Regeneration (hectares)				
Clearcut system	22,480	34,598	631	57,708
Strip cut			15	15
Seed tree cut	123	3,382	283	3,787
Shelterwood system		3,407	3,363	6,769
Subtotal Natural Regeneration	22,603	41,386	4,291	68,280
ASSISTED REGENERATION				
Planting (hectares)	33,810	36,200	2,436	72,446
Trees (000's)				
Bareroot			226	226
Container	49,234	55,094	2,117	106,445
Seeding (hectares)				
Direct	28,115	5,493		33,608
With site preparation	2,877	646		3,523
Scarification (hectares)	96		99	195
Subtotal Assisted Regeneration (hectares)	64,898	42,339	2,535	109,772
Subtotal even-aged management (hectares)	87,501	83,724	6,826	178,052
TOTAL REGENERATION (hectares)	87,501	84,498	14,716	186,715
SITE PREPARATION (hectares)				
Mechanical	29,523	19,870	1,061	50,454
Chemical	949	2,236	647	3,832
Prescribed burn	2,201	23		2,223
TOTAL SITE PREPARATION (hectares)	32,673	22,128	1,709	56,510

¹ This table includes estimated data for the following management units: Brightsand, Black River, Black Sturgeon, Caribou, Dog River-Matawin, English River, Nipissing, Nighthawk, Shiningtree, and Wawa. Data for 2003-2004 was not submitted from these management units in time for inclusion in this report. Estimates are based on the previous report year.

under the uneven-aged selection silvicultural system, is carried out in tolerant hardwood stands in the Southern Region and, to some extent, in the Northeast Region. Approximately 18 percent less area was reported as regenerated using this system in 2003-2004 than in 2002-2003.

The clearcut silvicultural system is the primary system used in the Boreal Forest of the Northeast and Northwest regions, mainly in stands containing jack pine, black spruce, poplar, and white birch. Approximately six percent more area was reported as naturally regenerated under the clearcut system in 2003-2004 than in 2002-2003.

Regeneration using the strip cut method is a variation of the clearcut silvicultural system. It involves

the removal of the stand in progressive strips or blocks in more than one operation. The strip cut method is prescribed to encourage natural regeneration, provide wildlife habitat, protect fragile sites, or for aesthetics. Regeneration using the seed tree method is also a variation of the clearcut silvicultural system. It involves the removal of all commercial trees from an area, except for a small number of seed-bearing trees left singly or in small groups for regeneration purposes. The seed tree method is used primarily in white pine and red pine stands in the Northwest and Northeast regions.

Natural regeneration using the shelterwood system occurs mainly in white pine and tolerant hardwood stands in the Northeast and Southern regions.

Approximately 17 percent more area was reported as regenerated using this system in 2003-2004 than in 2002-2003.

Natural regeneration using the selection system occurs mainly in hardwood stands in the Great Lakes St. Lawrence forest region. Regeneration using this system has decreased significantly to 8,663 hectares during 2003-2004.

The total number of seedlings planted in 2003-2004 was 107 million, a decrease of 24 percent from the previous year (Figure 6b). The use of container seedlings has remained relatively stable at approximately 95% of the total stock used.

The total reported level of regeneration (including both natural and assisted regeneration) increased slightly compared to 2002-2003 to 192,537 hectares (Figure 6d). Regeneration levels tend to follow fluctuating trends.

Figure 6a Regeneration area by silvicultural system

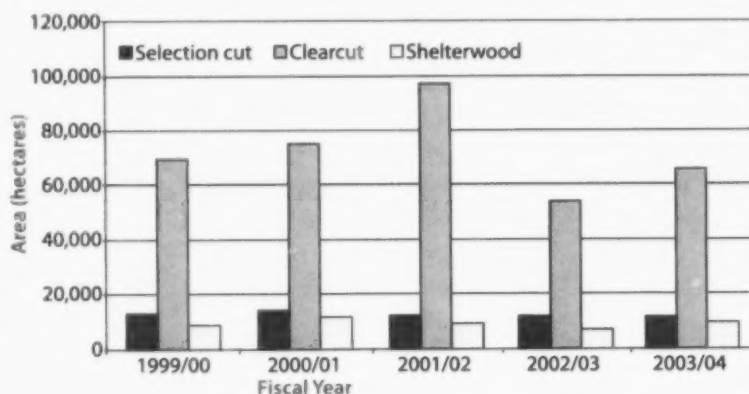
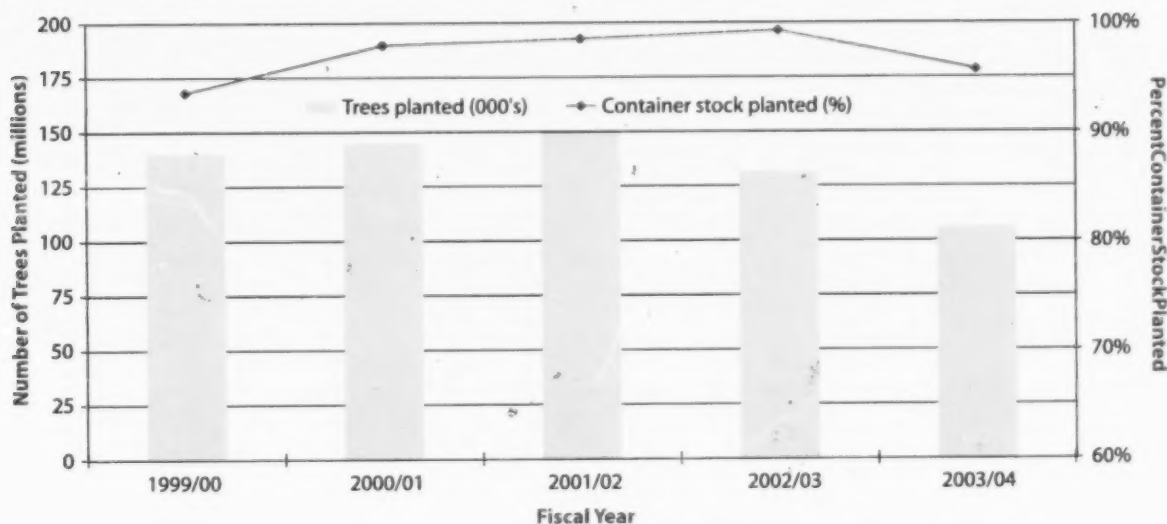
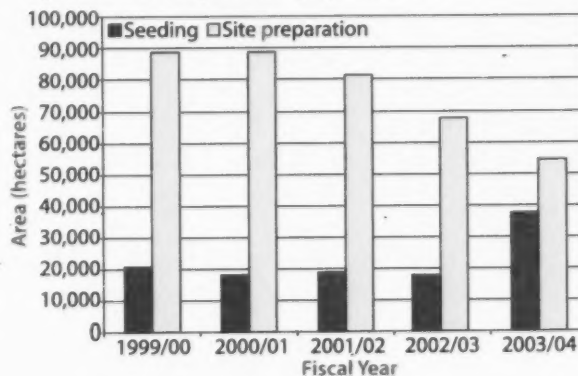


Figure 6b Total number of trees planted



Jack pine is the main species used for seeding, most of which occurred in the Northwest region. The overall seeding levels in 2003-2004 also increased dramatically up more than 53 percent from 2002-2003, to a new 5 year high. Mechanical site preparation is the main site preparation method used in all regions, followed by chemical site preparation, then prescribed burning. Provincially, the total area treated with site preparation decreased almost 25 percent from the previous year, continuing a 5 year decreasing trend in the use of site preparation. (Figure 6c)

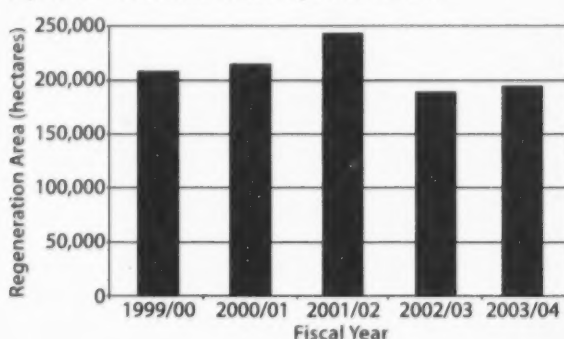
Figure 6c Seeding and site preparation area



tuations in harvest and, to a lesser degree, forest depletions from natural causes such as forest fires and insect epidemics.

Comparison of harvest and regeneration levels on an annual basis is not appropriate because of the regeneration establishment period and the reporting delay. Comparison of average harvest and regeneration levels over a five-year period is more appropriate. The average total provincial harvest area from 1997-1998 to 2002-2003 was approximately 218,209 hectares. The average total provincial regeneration level from 1998-1999 to 2003-2004 was approximately 207,600 hectares, or approximately 2 percent less than the average harvest level. More complete reporting requirements have resulted in reported regeneration levels moving closer to reported harvest levels over the last few years.

Figure 6d Provincial forest regeneration area



Forest Maintenance Tending

Tending includes the operations of weeding, cleaning, thinning, spacing, and stand improvement. Forest tending operations are carried out to improve the survival, growth, or quality of a regenerating forest. Tending may be done in young stands to help attain Free-To-Grow status (for more information on Free-To-Grow, see Chapter 7, Silvicultural Effectiveness Monitoring), or conducted in uneven-aged stands to maintain the desired age-class distribution and volume.

Table 6b summarizes the tending activities conducted on Crown land in 2003-2004, for the province and for each MNR region. Reported levels of tending were down almost 14 percent from the previous year. Tending in uneven aged stands was the only activity which increased during the year (an increase of almost 10%).

Protection

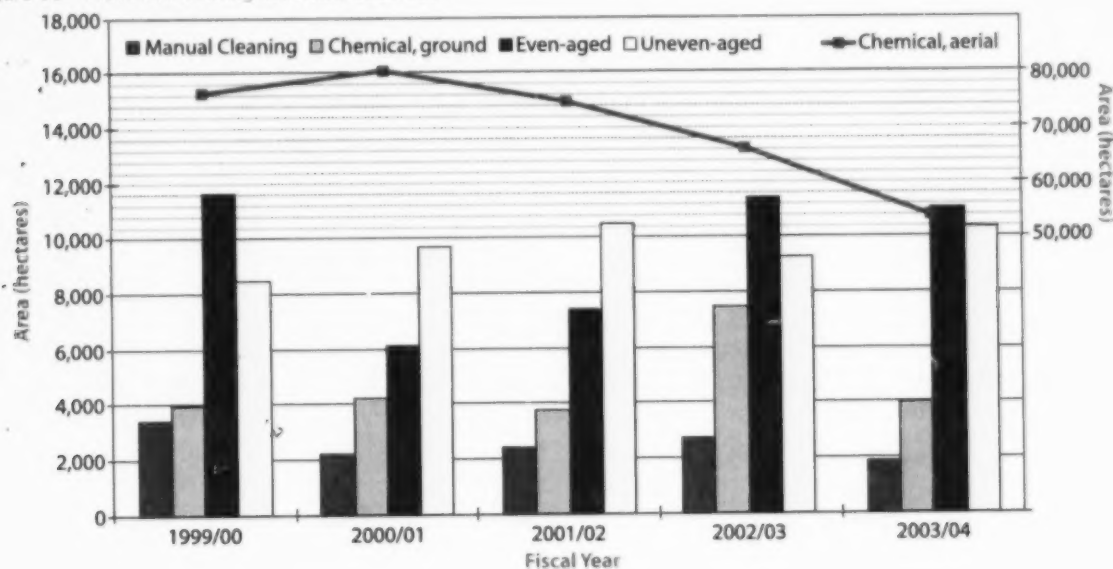
Protection operations prevent or manage the damage caused by insects and diseases. No forest protection activities were reported in 2003-2004.

Table 6b Provincial tending activities, 2003-2004

Tending (hectares)	Northwest	Northeast	Southern	Total
Cleaning				
Manual	705	589	588	1,882
Chemical - ground	1,049	1,132	1,795	3,976
Chemical - aerial	13,585	39,797	815	54,197
Mechanical				
Spacing, Precommercial Thinning, Improvement Cutting				
Even-aged	6,460	3,094	1,432	10,987
Uneven-aged		2,484	7,742	10,226
Total Tending	21,800	47,097	12,372	81,268

¹ This table includes data reported from 2002-2003 for the following management units: Brightsand, Black River, Black Sturgeon, Caribou, Dog River-Matawin, English River, Nipissing, Nighthawk, Shiningtree, and Wawa. Data for 2003-2004 was not submitted from these management units in time for inclusion in this report.

Figure 6e Provincial tending activities, 2003-2004



SELECTED SILVICULTURE DEFINITIONS

Bareroot stock

Seedlings that have been grown in an outdoor environment and in the soil of a compartment in a nursery. These seedlings are lifted and the soil removed from the roots prior to shipment for planting.

Container stock

Seedlings, usually grown in a controlled environment such as a greenhouse, in some form of container. These seedlings, when shipped for planting, retain the growing media around their roots.

Site preparation

Disturbance of the forest floor, upper soil horizons and vegetation to create suitable conditions for assisted regeneration by mechanical or chemical means, or by prescribed burning.

Scarification

Mechanical preparation of a site to promote natural regeneration.

Prescribed burn

The knowledgeable application of fire to a specific land area to accomplish predetermined resource management objectives.

Cleaning

A manual, mechanical, or chemical operation in a young stand to reduce, eliminate, or suppress undesirable competing vegetation. Cleaning promotes survival and growth in desirable trees by removing competing vegetation of similar age that may overtop them, or are likely to do so.

Improvement cutting

The elimination or suppression of less desirable trees in favour of more desirable ones, typically in a mixed, uneven-aged stand.

Thinning

A cutting made in an immature stand to accelerate growth of the trees left uncut. The goal is to foster quality growth and improve sanitation.

Commercial thinning

Removing trees from a developing young stand so the remaining trees will have more growing space, dead and dying trees will be salvaged, and the operation will make a net profit.

Pruning

The removal of live or dead branches from a standing tree to improve wood quality.

Funding for Forest Renewal and Maintenance

The financial mechanisms established under the CFSA, and outlined in Chapter 3, ensure that there is funding available for forest renewal and maintenance.

Each SFL holder contributes the appropriate level of renewal charges to an account in the Forest Renewal Trust Fund, which may only be used to conduct eligible silviculture work on the specific licence area from which the monies were generated upon harvest.

Forest resource licensees, operating on management units where no SFL exists, pay renewal charges into the Forest Renewal Special Purpose account. This account provides dedicated funding for forest renewal and tending operations.

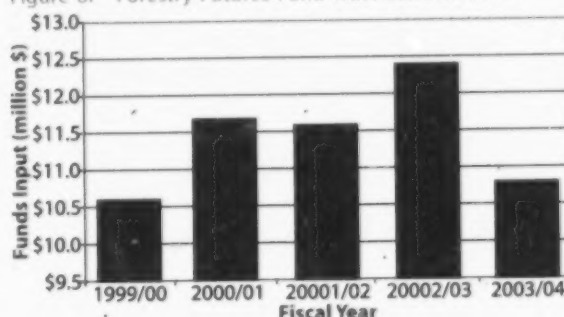
The MNR is responsible for administration of the Forest Renewal Special Purpose Account. As with the Forest Renewal Trust Fund, each forest or management unit has its own separate account to cover forest renewal and tending costs.

Money for a third fund, the Forestry Futures Trust Fund, comes from a portion of the Crown charges that all licensees pay. In addition, any administrative penalties assessed under the CFSA are paid into the Forestry Futures Trust Fund. This account, managed by an independent Crown committee, funds projects that meet MNR-approved criteria. To qualify, projects must be: a silvicultural activity on Crown land that addresses renewal of trees killed or damaged by fire; renewal of land where a licensee becomes insolvent; forest protection from insect or disease infestation; intensive stand management related to a critical wood supply; or, expenditures for Independent Forest Audits, Forest Resource Inventories, or conversion charges¹.

The annual contributions to the Forestry Futures Trust Fund since 1999/00 are presented in Figure 6f. Total funds deposited to the Forestry Futures Trust Fund in 2003/04 amounted to approximately \$10.3 million.

In addition to these trust funds and special purpose accounts, the MNR supports forest renewal through the operation of the Ontario Tree Seed Plant and tree improvement programs.

Figure 6f Forestry Futures Fund Trust contributions



Total forest renewal and maintenance expenditures in 2003/04 totalled \$98.5 million. The source of these expenditures is presented in Table 6c. The reporting mechanism for renewal and maintenance expenditures from the Forestry Futures Trust Fund was changed in 2001-2002. The amount reported now includes only project disbursements. In annual reports prior to 2001-2002, other disbursements were included in the reported total, including expenditures for Independent Forest Audits, Forest Resources Inventories, and conversion charges.

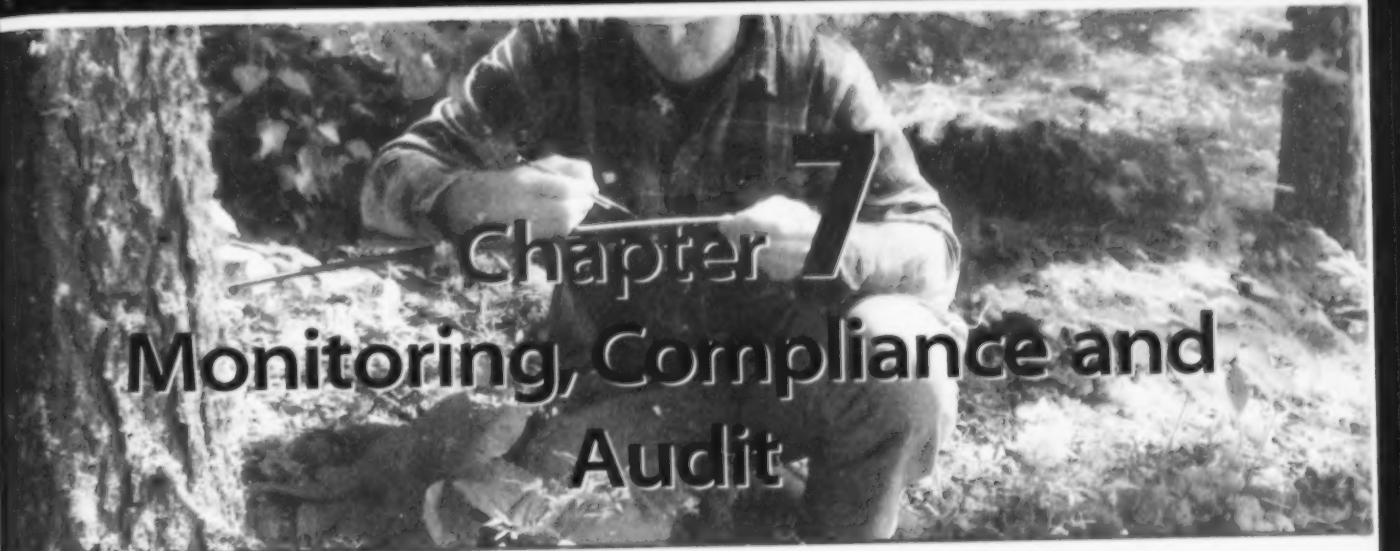
In 2003-2004, some adjustments to renewal rates occurred on individual management units to reflect the local costs of renewing and tending various species and to reduce specific accumulated surpluses in individual Renewal Trust Fund accounts. These rates will continue to be reviewed and adjusted annually to ensure that adequate levels of funding are maintained. A complete listing of the 2003-2004 renewal rates for each management unit is provided in Appendix 5.

Table 6c Provincial forest renewal expenditures, 2003-2004

Source	Expenditure (million \$)
Forest Renewal Trust Fund	\$86.0
Forestry Futures Trust Fund	\$9.5
Special Purpose Account	\$2.4
Direct MNR Expenditures	\$0.6
Total Renewal Expenditures	\$98.5

¹ For 2003-2004 this amount includes only project disbursements. In annual reports prior to 2001/02, other disbursements (for Independent Forest Audits, Forest Resources Inventories, and conversion charges) were included in the reported total.

¹ Conversion charges are used to assist new, smaller SFLs with costs associated with the establishment of an SFL (e.g., inventory).



Chapter 7

Monitoring, Compliance and Audit

Forest management and operations in Ontario are monitored and audited to assess compliance and evaluate progress and results. The three types of monitoring used are effectiveness, effects, and compliance. The information collected and analyzed for effectiveness monitoring determines how well the forest is growing. Effects monitoring assesses the impacts of operations on various aspects of the forest ecosystem through long-term studies. Compliance monitoring is conducted to ensure that the MNR and the forest industry carry out operations according to plans, regulations, and the required standards.

Forest management is also audited through Independent Forest Audits, providing independent published assessments of management units across the province. Forest certification, a separate but related process, is a voluntary market-oriented means of promoting sustainable forest management, in which an independent third party evaluates forest management systems according to pre-established standards.

Silvicultural Effectiveness Monitoring

Harvest and renewal activities are reported annually for the year they are implemented. Determination of the success of these activities in regenerating the forest occurs by specific assessment methods, conducted a number of years (usually 5 to 15 years) after regeneration treatments are completed.

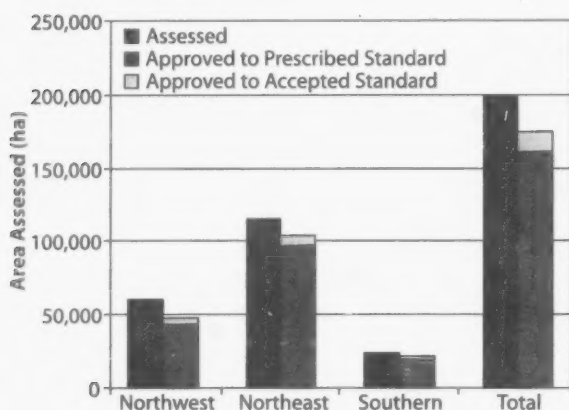
Free-To-Grow (FTG) assessments are an effectiveness monitoring tool that provides an indication of the success of silvicultural treatments, and information used to project the future forest condition. These assessments involve a variety of techniques, including field measurement of trees on sample areas of the forest, aerial surveys, and remote sensing. Some forest managers conduct these surveys annually, while others prefer to accumulate larger blocks that they assess once every few years. The Forest Renewal Trust Fund provides funding for these surveys on all management units, and many forest companies have assessed both their scheduled areas and backlog areas.

In the forest management planning process, silvicultural ground rules are developed for future regenerated stands. The prescription for a stand identifies silvicultural treatment packages that should result in the development of a prescribed future forest unit and also identify other future forest units that will be accepted should the prescribed result not occur. Stands regenerating to alternate accepted FTG standards are being reported for the first time in this annual report. Of the total of 200,000 hectares assessed for FTG in 2003-2004, 161,000 hectares (80 percent) was approved as having achieved the prescribed FTG standard within a set time period. This result varies by MNR region, from 44,000 hectares (73 percent) in the Northwest Region and 97,000 hectares (84 percent) in the Northeast Region to 19,000 hectares (80 percent) in the Southern Region.

An additional 14,000 hectares (7%) was approved as having achieved an alternate accepted FTG stand-

ard. Again this result varies by MNR region, from 5,000 hectares (8 %) in the Northwest Region, to 7,000 hectares (6%) in the Northeast Region and 2,000 hectares (8%) in the Southern Region.

Figure 7a Summary of area declared free-to-grow by MNR region, 2003-2004

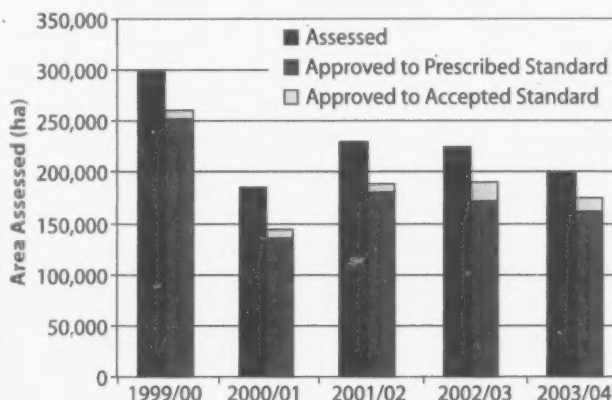


A summary of the area assessed and approved as FTG to the prescribed standard for the period 1999-2004 is presented in Figure 7b. After two years (1999/00 and 2000/01) of continual decline in area assessed and approved as FTG to the prescribed standard, there was an increase in the provincial area declared FTG in 2001-2002. However, after 2001-2002 the results show a very gradual decline in both the area assessed and the area approved, which equates to an approximate 5% decrease per year in the area approved as FTG to the prescribed standard. In 2003-2004 those stands regenerating to alternate accepted FTG standards are being included for the first time. Data has been included to depict a trend over the past five years, and is portrayed using a stacked bar graph (Figure 7b).

On a province-wide basis, the percentage of assessed area that was declared FTG to the prescribed standard continued its gradual increase in 2003-2004 (Figure 7c). In 2003-2004 Southern region reported a 12% increase in the area assessed and a 50% increase in the area reported as FTG

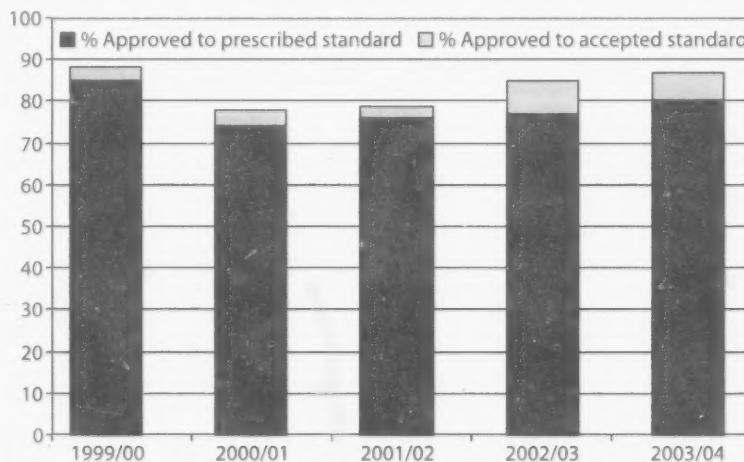
to the prescribed standard. Northeast Region reported an 18 % increase in the area assessed and a 26% increase in the area reported as FTG to the prescribed standard. However, Northwest region reported a sig-

Figure 7b Summary of area declared free-to-grow by fiscal year



nificant decline in these numbers; reporting a 43% decrease in the area assessed and a 46% reduction in the area reported FTG. The percentage approved as FTG to the prescribed standard in the Southern region continued last year's upward trend, increasing from 46% in 2001-2002, to 59% in 2002-2003 and finally to 80% in 2003-2004. When the data includes the area approved as FTG to an accepted standard it becomes evident that the per cent area approved as FTG, to either an accepted or prescribed standard, is increasing.

Figure 7c Percent assessed area declared free-to-grow for the Province



In 2003-2004, 80% of the management units eligible to report, actually reported. Southern Region had 100% of management units reporting. Ten (six in the Northwest and four in the Northeast), of the management units reporting in 2003-2004 identified that zero hectares were surveyed and approved as FTG.

Regenerating areas being reported in 2003-2004 were harvested and treated a number of years ago (typically 5 - 15 years). However, in response to independent forest audit recommendations and inventory updating process, a number of management units are continuing to assess backlogged areas which may be considerably older. Those treated prior to April 1, 1995 occurred before the implementation of the CFSA and the associated Forest Renewal Trust and Forestry Futures Trust Funds. Support from the Forestry Futures Trust and the Forest Renewal Trust Funds provide the funding for forest managers to ensure that harvested areas have the necessary treatments to achieve successful renewal. All harvested areas must be renewed successfully. Some of the areas found not FTG at this time need re-treatment, and others require tending (i.e. to suppress undesirable competing vegetation such as brush and grass). Other areas simply require the passage of more time to allow for the incremental growth necessary to meet the height standard for FTG. Renewal success rates should continue to improve in future reports because of these legislative and funding changes.

Compliance Monitoring

The forest operations compliance monitoring system in Ontario is designed to ensure the MNR and forest industry conduct forest operations in compliance with legislation and according to approved plans (e.g. forest management, fire, compliance) and operational standards.

At the management unit level, compliance inspection reports are prepared for harvest, access, renewal, protection and maintenance operations. These reports help managers focus on activities that may require immediate attention, supply a database for

identifying provincial trends, and provide feedback for compliance program adjustment.

MNR's regulatory role is one of monitoring/auditing, conducting "spot-checks" of industry activity, investigation, and enforcement. The SFLs have lead responsibility for conducting a comprehensive forest operations compliance program as a condition of their licence. The program includes planning, monitoring, inspection, reporting, training and education. On the few management units where the MNR remains responsible for forest operations, the MNR remains directly responsible for delivering all aspects of the compliance program.

It is mandatory for all MNR forest compliance inspection staff to use the Forest Operations Compliance Information System (FOCIS) to complete inspections of Crown units and any spot-checks or audits of SFLs. All inspections must also be submitted to the provincial database, known as the Compliance Information System. The forest industry completes and submits reports according to technical standards and requirements of the *Forest Information Manual*. In 2003-2004 all forest industry companies used the FOCIS application for electronic reporting.

This annual report summarizes data collected across the province from a standard electronic format for inspection reporting. Interpreting the data collected through FOCIS and the Compliance Information System requires experience and understanding of the systems and the functions as carried out through the MNR and forest industry partnership. The forest industry (SFL holder) is required to report all incidents of non-compliance on their management unit to the MNR. This includes infractions incurred by the SFL, overlapping licensees, shareholders and any private individual who contravenes the CFSA. The SFL does not have responsibility for assessing the significance of non-compliance. This is strictly an MNR responsibility as the regulatory agency.

The MNR's regulatory role, with respect to forest operations compliance, includes the verification of all instances of non-compliance as reported by companies. Therefore, for each report of non-compliance

by industry, there will also be at least one MNR inspection report confirming the industry report. For incidents assessed as moderate or significant, the MNR will actively monitor the non-compliance until it is resolved. This action may result in additional reports of non-compliance by the MNR for the same occurrence. In addition, the MNR undertakes random as well as planned spot-checks and audits of forest operations. This may result in additional reports of non-compliance which may not have been reported by a company, due to a difference in interpretation between industry and the MNR. In some cases, especially those of a minor nature, industry may remedy the situation and deem the infraction too minor to report. Some companies may record an incident as "in compliance with comments". This category recognizes that a minor situation is present, generally correctable, and with some room for improvement in operational practices.

In summary, fundamental differences between the MNR audit and verification role and the industry inspection role will lead to differences in non-compliance reported by the MNR and industry, with the percentage of MNR non-compliance reports tending to be higher. Proposed changes to the reporting system in the near future will separate multiple and du-

plicative reporting of MNR and industry reports on the same operation.

On-going training of all field inspectors will continue to narrow the gap in compliance interpretation. A compliance inspector competency certification program for all MNR and forest industry inspectors was initiated in 2001, to improve overall skills and competencies in compliance assessment and reporting, and to enhance standardization. In 2003-2004, 91 forest sector and MNR inspectors were certified. This competency certification will continue until all forest operations compliance inspectors become certified.

Results of both industry and MNR compliance inspections are summarized in Table 7a.

Overall, inspection of forest operations for the past three years has remained relatively constant. The compliance rate as reported by the forest sector has remained stable at about 95%. The 5% non-compliance rate relates primarily to minor infractions, and is predictable given the magnitude of inspections and total area under operations across all management units. The MNR focused its auditing and spot-checking on those operations having the greatest potential for impact on the environment and sustainability of the forest.

Table 7a Forest operations compliance inspection reports summary, 2003/04

INDUSTRY					MNR				
Operation Type	Total #		Total # Non-	Total Audits,	Total #	Total # Non-	Significance of		
	Total #	Compliant	Compliant	Checks,			Compliant	Compliant	Non-Compliant Reports
	Reports	Reports	Reports	Verifications	Reports	Reports	Minor	Moderate	Significant
Access	1717	1636	81	733	587	146	122	21	3
Harvest	4028	3815	213	1339	1099	240	196	38	6
Renewal	863	843	20	116	99	17	11	5	1
Maintenance	278	269	9	27	24	3	2	1	0
Protection	2	2	0	1	0	1	0	1	0
TOTAL REPORTS*									
2003-2004	6888	6565	323	2216	1809	407	331	66	10
2002-2003	7455	7074	381	1856	1469	387	298	68	21
2001-2002	6753	6399	354	2117	1621	496	355	109	32
2000-2001	6161	5877	284	2280	1797	483	336	121	26

*Provincial Compliance Information System, July 27, 2004

Note: The data for each operation type should not be examined in isolation due to the interrelated nature of activities. An inspection is comprehensive in terms of its ability to examine all related activities or sub-activities within the operation. Protection (e.g. fire inspections) is an activity within each main operation type.

Road Washouts

Compliance inspections of water crossings conducted throughout 2003-2004 indicate that forest companies reported 34 washouts. Thirty-eight additional washouts were identified by the MNR for a combined total of 72. Washouts can occur due to a number of factors, including natural causes such as spring flooding, heavy and/or prolonged rains, blockage due to beaver activity, and poor road construction techniques.

Actions Taken

In the self-monitoring and reporting compliance partnership model, industry must report non-compliance situations, and the MNR verifies, assesses the significance, and determines the appropriate remedy and enforcement action if any is required.

In many instances of minor non-compliance, immediate remedial action is undertaken and enforcement measures are not warranted. While the CFSA remedy and enforcement provisions apply largely to licensees of the Crown, any person who contravenes the CFSA may be charged. A total of 16 offence charges were laid under the CFSA against individuals who were unlawfully harvesting forest resources in a Crown forest (see Table 7b).

Table 7b Remedy and enforcement action taken, 2003-2004

Method	Count	Fine
Administrative Penalty ^a	20	\$160,013.10
Offence Charge ^b	16	\$53,138.00
Stop Work Order	0	n/a
Repair Order	3	n/a
Compliance Order	3	n/a
Warnings	14	n/a
Total Actions Taken 2002/03	56	\$213,151.10
Investigations (no charges warranted)	0	n/a
Total Actions Taken 2002-2003	177	\$190,211.70
Total Actions Taken 2001-2002	113	\$121,069.44
Total Actions Taken 2000-2001	156	\$292,595.77

^a To Forestry Futures Trust Fund

^b To Consolidated Revenue Fund (general revenue)

Source: CAVRS (Compliance Activity and Violation Reporting System) October, 2005 / OTAR (Ontario Timber Accounts Receivable) July, 2005

Although all incidents of non-compliance are reported in the fiscal year in which they occurred, a number of cases are ongoing (under investigation or subject to court action) in terms of remedy and enforcement action. These will be recorded when resolved.

Independent Forest Audits

Independent Forest Audits are a requirement of the CFSA, Condition 28 of MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario (2003), and are a condition of SFLs. All management units are audited at least once every five years to review operations and examine the forest management activities carried out over the previous five years.

The audit is a systematic and documented verification process to assess adherence to the FMP and the planning process. Assessing the interpretation and application of provincial legislation, manuals, policies, and guidelines at the management unit level is also part of the audit. Auditors examine the effectiveness in achieving the planned objectives and provide an assessment of forest sustainability for the management unit. Audit teams review licensee compliance with the obligations of their specific SFL.

In order to address the audit purpose and objectives, the audit process and protocol document sets out the forest management principles, criteria, and procedures for undertaking Independent Forest Audits. The audit protocol identifies eight guiding principles, identified by the following titles: commitment, public participation, forest management planning, FMP implementation, systems support, monitoring, achievement of management objectives and forest sustainability, and contractual compliance. For each principle, a series of specific criteria are identified that, when met, will result in achievement of the principle.

The audit terms of reference are the same for all Independent Forest Audits, including the audit team personnel requirements. All members of

an audit team must have a minimum of seven years recent and relevant experience in forest types similar to those being audited. They must be independent of the operations they audit as well as free from conflict of interest throughout the process. The audit team must include a Registered Professional Forester. For the 2003 audits, the audit team was required to provide an audit against the requirements that were in effect during the audit period and prepare the subsequent report for publication.

Action plans must be developed in response to each audit report. The SFL holder and the applicable MNR district jointly develop the action plan. For each recommendation in the audit report, the action plan must state the required action, the organization and individual responsible for the work, deadline dates, and a method of tracking the progress of the action plan. A status report on the action plan is required two years after its approval to ensure that progress is occurring as specified in the plan. The Independent Forest Audit reports are tabled in the legislature and are available upon request.

Summary of the 2003 Independent Forest Audits

The 2003 Independent Forest Audits were initiated on seven management units, but were only completed on six (see Figure 7g). The audit contract for the Kenora audit was terminated at the request of the auditor prior to completion, and has been re-tendered and re-audited in 2004. Four of the management units were managed via SFLs throughout the five-year audit period. Two management units were in transition, which resulted in a mix of Crown and SFL management during the period. External consultants, independent of the licensees and the MNR, carried out the audits. Table 7c provides a complete listing of the 2003 audit reports by forest manager and independent auditor.

All of the 2003 audit reports concluded that the forests were generally managed in compliance with legislation and policy, with licence requirements, and with principles of sustainable forest management during the term of the audit (Table 7d). The six audit reports recommended that each of the sustainable

Figure 7d Management units audited in 2003, and management units scheduled for audit in 2004

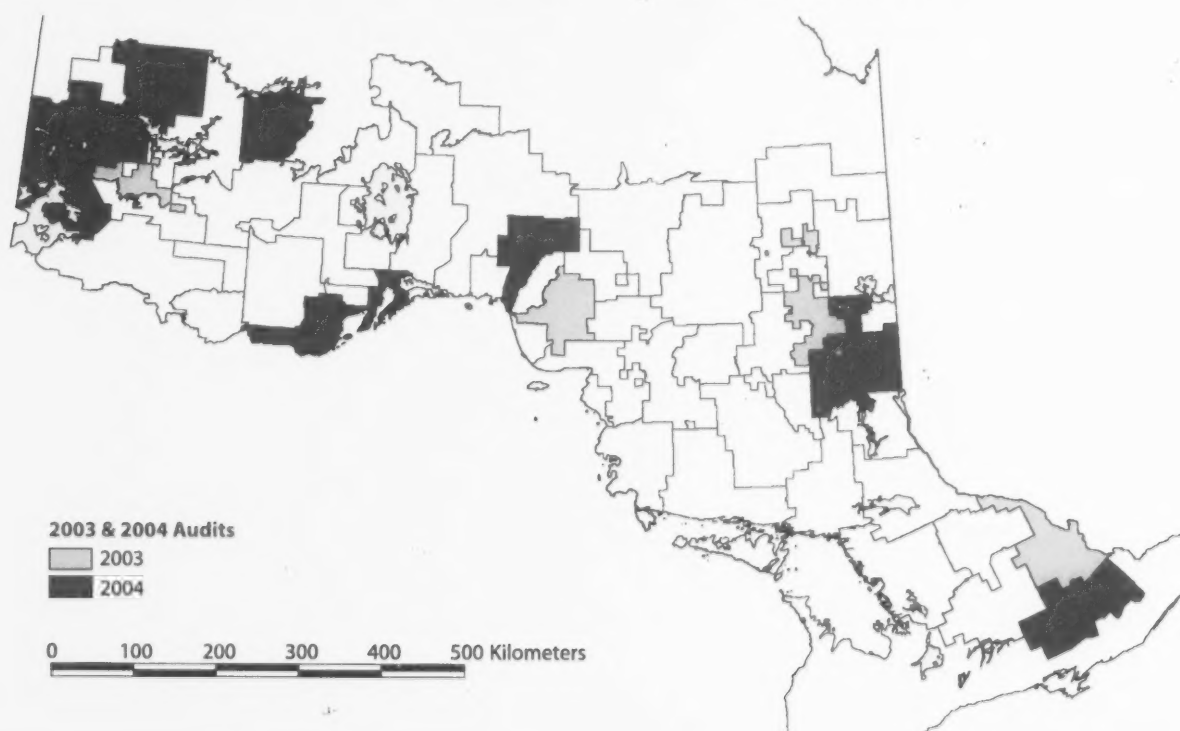


Table 7c 2003 Independent Forest Audits

Report/Forest(s)	Licensee/Forest Manager	Independent Auditor
Driftwood Forest	Abitibi-Consolidated Company of Canada	KBM Forestry Consultants Inc.
Dryden Forest	Dryden Forest Management Company Ltd.	Callaghan & Associates Inc. & BioForest Technologies Inc.
Ottawa Valley Forest	Ottawa Valley Forest Inc. & MNR Pembroke District	ArborVitae Environmental Services Ltd.
Timmins Forest	Abitibi-Consolidated Company of Canada	KBM Forestry Consultants Inc.
Timmins Management Unit	Abitibi-Consolidated Company of Canada & MNR Timmins District	KBM Forestry Consultants Inc.
White River Forest	Domtar Inc.	ArborVitae Environmental Services Ltd.

forest licences should be extended for a further five-year term.

The Driftwood Forest audit report identified 14 recommendations for improvement and one best practice relative to the management of the Forest. Eight of the recommendations were directed at MNR. Five focused on documentation and process requirements, including records of public notices, missing socio-economic data, distribution of amendments, late submission of data for Annual Reports, and IFA status reports. The remaining three recommendations were field oriented, including the allocation of resources for non-timber values identification, compliance monitoring and reporting, and inspections of aggregate pits. Six recommendations are directed at Abitibi. Four were oriented at administration, establishing clear harvest selection criteria, providing clear explanations of planned expenditures, documentation of other values during silviculture operations, and timely submission of annual reports. At a field level, the rehabilitation of tertiary winter roads was identified as lacking. To ensure that judgments about the forest are being based on accurate data regarding the forest condition, it was recommended that Abitibi analyze the data contained in Annual Reports, Reports of Past Forest Operations (RPFOs), and the Trend Analysis Report. The best practice recognized the innovative and effective practice of using natural vegetation mats as an alternative to rip-rap at some water crossings and as a rapid stabilizing method on culvert embankments.

The Dryden Forest audit report identified 14 recommendations for improvement relative to the management of the Forest. Seven recommendations were directed at improving FMP development. The auditor concluded that Dryden Forest Management Company (DFMC) and MNR personnel should focus their efforts on improving the quality of the 2006 FMP, rather than trying to rectify weaknesses in the 2001 FMP. The auditor identified the need for more staff resources at the management company. Compliance planning and reporting should be improved. Past and current silvicultural records need to be accurately documented within the new forest inventory. Significant landbase changes should be rationalized in the FMPs, trend analyses and RPFOs. The Forest Renewal Trust minimum balance needs to be raised to recognize the increased harvest level that has occurred over time on this Forest.

The Ottawa Valley Forest audit report identified 22 recommendations for improvement and two best practices relative to the management of the Forest. MNR and Ottawa Valley Forest Inc. (OVFI) should make a high-priority effort to work with Aboriginal communities to provide them with more forest-based opportunities. The MNR should ensure that accurate information on selected wildlife habitat is provided to planning teams, and should adequately fund its collection. To more effectively manage revisions of Annual Work Schedules: overlapping licensees should conduct more accurate pre-planning; OVFI and MNR should agree in advance as to which situations warrant

AWS revisions, and MNR needs an expeditious process for reviewing and approving revisions. To improve management of roads and water crossings, OVFI and MNR need to develop a memorandum of understanding on maintenance responsibilities, and should meet at least once a year to review implementation of road closures and abandonment in the Madawaska Highlands. Several recommendations focus on improving the monitoring of forest operations compliance: to enhance consistency MNR and industry organizations should calibrate their perceptions of non-compliance; OVFI and MNR should pursue ways to improve the compliance monitoring situation; MNR should organize a Regional compliance workshop, and MNR should review data discrepancies in compliance information systems, and develop an approach to reduce the differences. To improve its ability to monitor regeneration of pine shelterwood OVFI should carefully review the post-harvest inspection and treatment regime, and regeneration time lags. The OVFI and MNR need to devise approaches to assess progress in complying with some SFL conditions: the achievement of regeneration efforts on X, Y and Z lands; wood supply conditions and commitments in Appendices E and F. Crown charges should be paid in a timely manner, and OVFI should ensure that its Forest Renewal Trust account minimum balance is met at March 31st of every year. The best practices recognized the quality of planning and reporting documentation produced by OVFI, and the high level of commitment to forest management among the MNR, OVFI and local citizens' committee personnel.

The Timmins Management Unit audit report identified four recommendations for improvement relative to the management of the Forest. The MNR should ensure that all proposed operations are surveyed for moose aquatic feeding potential for the next FMP. Regional MNR and the industry should develop utilization and marketing strategies for cedar and hardwoods by the end of 2008. MNR and Abitibi must re-examine progress in responding to six of the recommendations of the 1998 Independent Forest Audit, to ensure compliance with the original action plan or develop appropriate new responses.

The Timmins Forest audit report identified nine recommendations for improvement relative to the management of the Forest. A provision should be set up to ensure that field survey data is uniformly recorded. The time taken by MNR to approve FMP amendments should not unacceptably impact or delay forest management operations. Regional MNR and the industry should develop utilization and marketing strategies for cedar and birch by the end of 2008. The development of strategies for the management of incidental species (yellow birch and cedar) is needed by the end of 2005. Strategies are also needed to prevent water quality damage by recreational users following the removal of water crossings. The development of Annual Reports must occur in a timely fashion.

The White River Forest audit report identified 25 recommendations for improvement relative to the management of the Forest. Three recommendations were directed at enhancing the role and functioning of the White River Area Co-Management Committee. A broad-based land use plan for the sub-region that includes the White River Forest is needed, to provide resource management direction for the area and to support effective functioning of the Forest Management Planning process. A number of recommendations focused on improvements to the application of the Forest Management Planning process, including responding to public correspondence, developing socio-economic profiles, providing correct FMP content for selected species habitats, providing adequate funding for values surveys, and certifying alterations relating to manipulation of forest cover. Slash management needs improvement. Yield curves for white birch and poplar require review and possible revision. Installation and maintenance of culverts, as well as grader operations, need improvement. The MNR should increase human resources in Wawa for the Area Forester role. Improvements to Annual Report information on regeneration success and forest operations inspections are recommended, as well as enhanced explanatory text on trends and deviations. The MNR should take steps to resolve two apparent boundary errors on the Forest.

The *White River Forest* audit report did not provide any recommendations or suggestions regarding Aboriginal communities. However, the report addressed an issue which has developed between the Ojibways of the Pic River First Nation and the International Woodworkers of America (IWA) and Domtar, which has prevented Pic River's logging company from obtaining a long-term harvesting agreement. Although MNR is not directly a party to this discord, it has been trying to solve the problem, as noted by the auditor: "...First Nations reported that they were satisfied that the MNR was doing everything that it could to improve the situation."

The complete individual audit reports are included on the CD attached to printed copies of this document, or online at: <http://www.mnr.gov.on.ca>

Summary of 1999 - 2003 Audit Reports

Following the completion of the 2003 audits, the program is in the third year of its second cycle of Independent Forest Audits. Table 7e summarizes the audit results from 61 audit reports completed over a 5-year period from 1999 to 2003. During this 5-year period 49 reports indicate that the majority (80%) of Management Units were managed in accordance with legislative and policy requirements that were in effect during the audit term. A further 8 reports (13%) were generally managed in compliance with legislative and policy requirements, however in these instances the auditor noted significant exceptions or conditions. Only 4 of the reports (7%) reached a wholly negative conclusion with respect to compliance with the requirements. The audit program is

therefore serving its purpose. Audit reports identify areas for improvement and the MNR and SFL holders continue to respond by putting solutions in place. These solutions are documented in mandatory action plans that are developed subsequent to the completion of audit reports.

Future Program

There are eight Independent Forest Audits planned for 2004: Big Pic, Caribou, Kenora, Lakehead, Mazinaw-Lanark,

Table 7d Results of IFAs for 2003

Management Unit	In Compliance ¹	Sustainably Managed	SFL Extension Recommended ²
Driftwood Forest	yes	yes	yes
Dryden Forest	yes	yes	yes
Ottawa Valley Forest	yes	yes	yes
Timmins Forest	yes	yes	yes ¹
Timmins Management Unit	yes	yes	yes
White River Forest	yes	yes	yes

¹ Managed in overall compliance with legislative and policy requirements in effect during the audit period

² This column is only applicable to management units managed under a Sustainable Forest Licence

Table 7e Five-year summary of audit reports

Audit Year	Number of Audit Reports	In Compliance ¹	In Compliance with Conditions or Significant Exceptions	Forest Manager			SFL Extension Recommended ² (Crown Units not Eligible)
				Crown	Transition	SFL	
1999	11	8	2	2	4	5	9 ⁴
2000	16	11	5	3	3	10	13 ⁵
2001	19	18	-	4	9	6	15
2002	9	6	1	-	3	6 ³	7
2003	6	6	0	-	2	4	6
Total	61	49	8	9	21	31	50

¹ Managed in overall compliance with legislative and policy requirements in effect during the period audited.

² SFL extension supported where applicable and/or licence obligations met during short term as licence holder.

³ The Agreement with the Algonquin Forest Authority is included in this number.

⁴ Three of the 1999 audit reports reached a conditional conclusion as to whether the licensee had met their obligations and/or whether the licence should be extended.

⁵ Three of the 2000 audit reports concluded that licence renewal was recommended conditional upon the SFL holder making progress to resolve / implement the recommendations for which they are specifically responsible.

⁶ It should be noted that 61 management units currently exceeds the number of management units in the province. The reduction in number of management units is due to amalgamations that have occurred over time.

Timiskaming, Trout Lake and Whiskey Jack Forests (see Figure 7d). The results of these audits will be published upon completion. All of these Forests are being audited for a second time under the Independent Forest Audit Program.

Forest Certification

Forest certification is a voluntary market-oriented system which evaluates forest management systems and or operations in reference to ecological, economic and social standards. The certification process requires applicants to demonstrate that they are complying with, or progressing towards, those certification standards. Forest products consumers are assured of an unbiased evaluation when forest certification evaluations are implemented by independent third party organizations (called certifiers). Within the limits of its provincial government mandate, the MNR provides technical and policy advice, both during the development of certification systems and to forest companies seeking certification of forest lands in Ontario.

There are three forest certification standards being considered by Ontario forest companies.

1. The two standards of the international Forest Stewardship Council (FSC) Principles and Criteria for Forest Management that are applicable to Ontario - FSC Standards for Well Managed Forests in the GLSL Forests of Ontario and Quebec (draft) and the National Boreal Standard
2. The Canadian Standards Association (CSA) Sustainable Forest Management (SFM) Standard, approved by the Standards Council of Canada, and

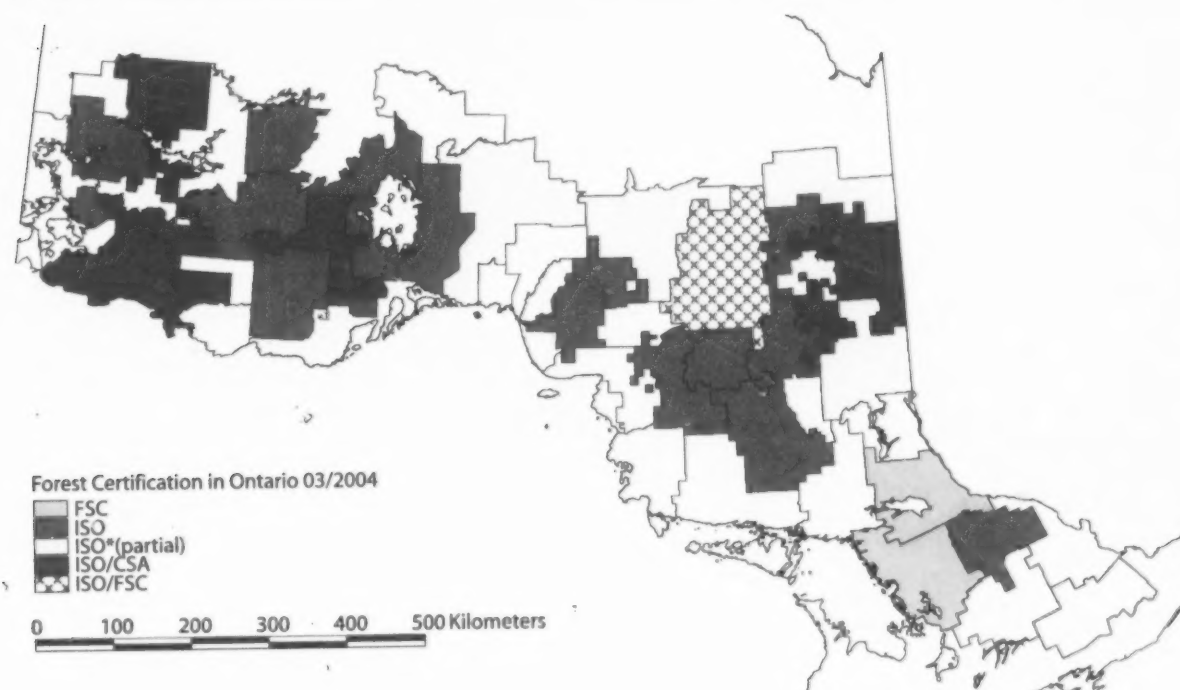
3. The American Forest and Paper Association's Sustainable Forestry Initiative (SFI).

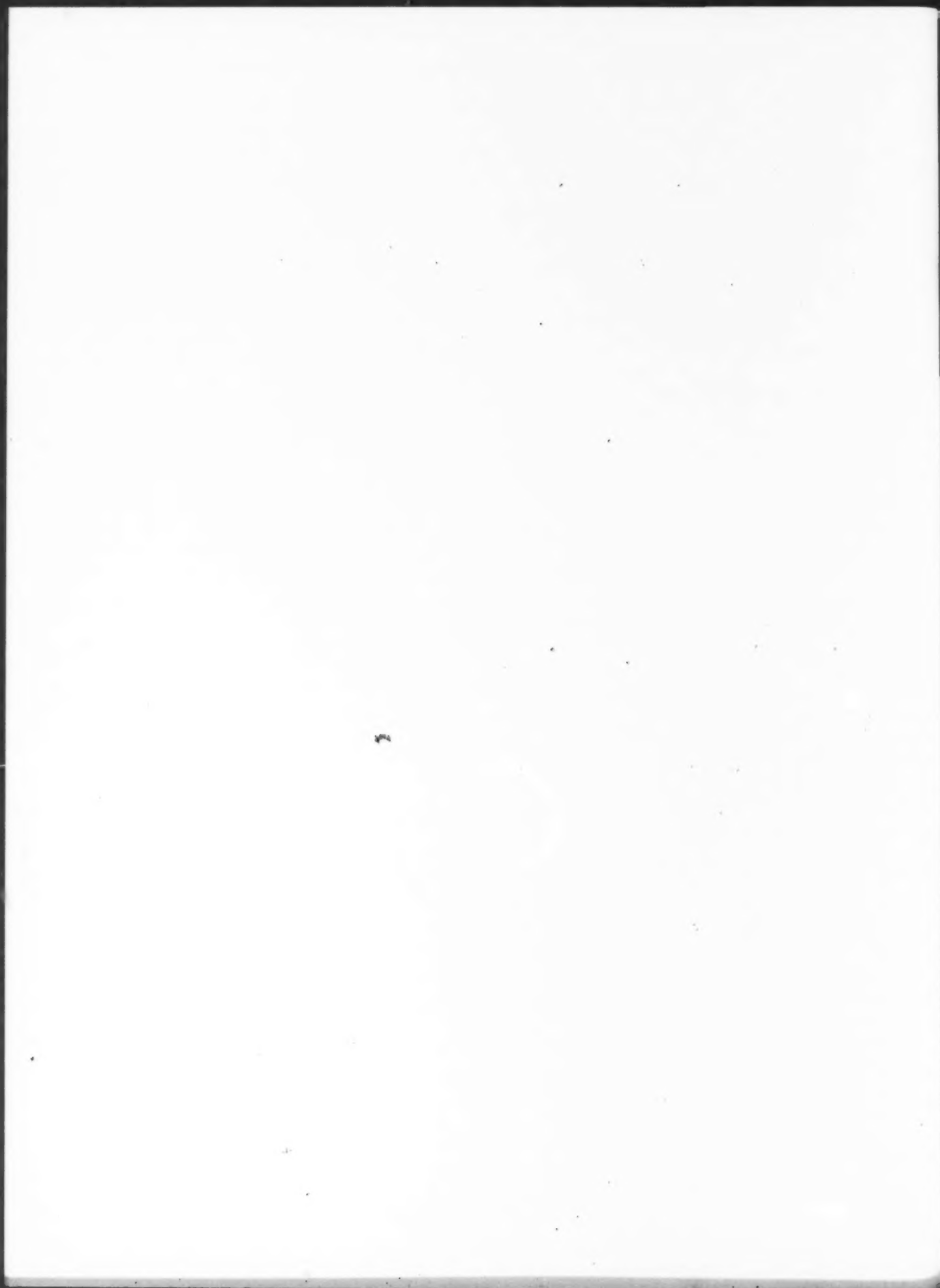
Many companies, as a first step in forest certification, have registered their environmental management systems to the International Organization for Standardization Environmental Management System (ISO) 14001.

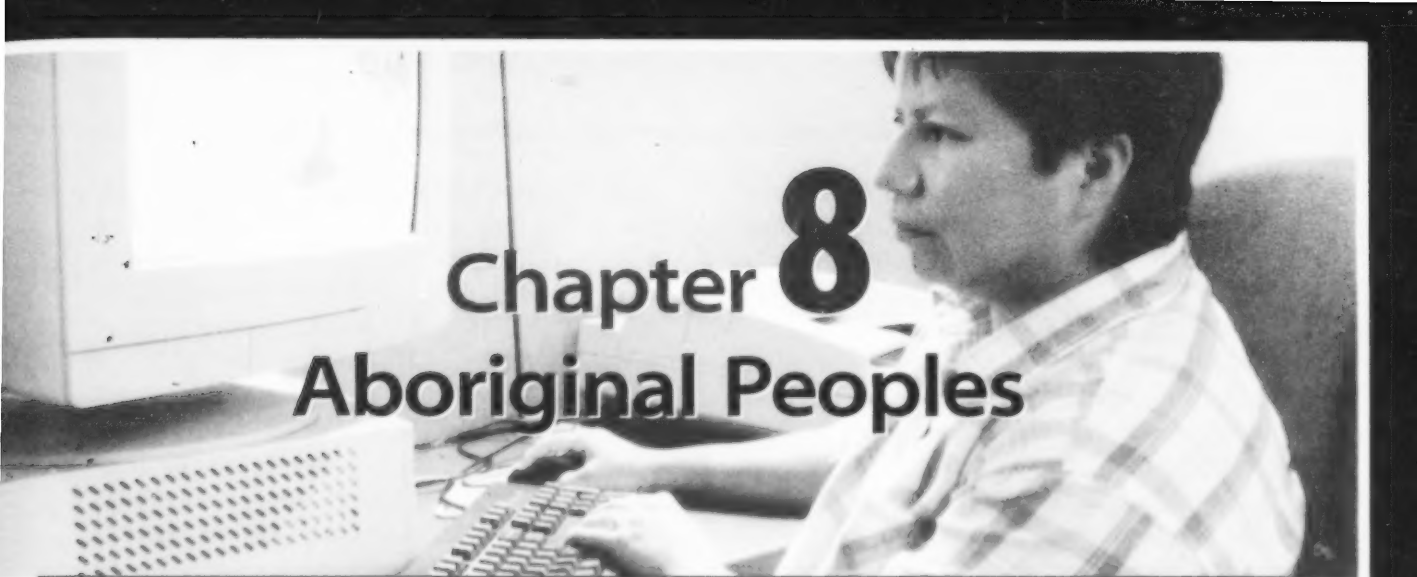
During the 2003-2004 fiscal year two SFL holders and one overlapping licensee obtained new ISO registrations (see Figure 7e). Five forests achieved CSA certification. Three of the five forests were managed by Abitibi Consolidated Company of Canada, namely the Iroquois Falls, Nighthawk and Spruce River Forests. Two forests, the Wabigoon and Trout Lake Forests, managed by Weyerhaeuser Company Ltd. were also certified to CSA. The Nipissing Forest, managed by Nipissing Forest Resources Management Inc. and the Gordon Cosens Forest, managed by Spruce Falls Inc. (a subsidiary of Tembec Inc.) were certified under the FSC standards. In addition, all previously registered/certified forest units continued efforts to demonstrate ongoing conformance to their selected certification systems during the fiscal year. It is anticipated that additional forest management units will become certified in the near future.

The MNR ensures the sustainable forest management of Crown forests through a rigorous policy and regulatory framework. Forest companies operating in Ontario are required to comply with long-term, ecosystem-based forest management planning. Extension of SFLs is dependent upon satisfactory results of a mandatory Independent Forest Audit. Therefore, forest management companies in Ontario are well positioned to meet any forest certification/registration system standard.

Figure 7e Status of forest certification in Ontario, March 31, 2004







Chapter 8

Aboriginal Peoples

Condition #34 of the declaration order regarding MNR's Class Environmental Assessment Approval for Forest Management in Ontario replaces the former (T&C) #77 requiring the MNR to negotiate with Aboriginal peoples at the local level regarding opportunities for more equal participation in the benefits of forest management. In referring to Aboriginal people, condition #34 includes communities, individuals, enterprises, and organizations. Condition #34 states:

"During the term of this approval, MNR district managers shall conduct negotiations at the local level with Aboriginal peoples whose communities are situated in a management unit, in order to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through forest management planning. These negotiations will include but are not limited to the following matters:

- a) Providing job opportunities and income associated with forest and mill operations in the vicinity of Aboriginal communities;*
- b) Supplying wood to wood processing facilities such as sawmills in Aboriginal communities;*
- c) Facilitation of Aboriginal third-party licence negotiations with existing licensees where opportunities exist;*
- d) Providing forest resource licences to Aboriginal people where unallocated Crown timber exists close to reserves;*

e) Development of programs to provide jobs, training and income for Aboriginal people in forest management operations through joint projects with the Department of Indian and Northern Affairs; and

f) Other forest resources that may be affected by forest management or which can be addressed in the timber management planning process."

Implementation of Condition #34

The scope of condition #34 is broad, and its application and implementation are determined at the local level. The arrangements and agreements effected by MNR district managers and Aboriginal communities take different forms, in an effort to accommodate the unique needs, capacities, and situations of individual Aboriginal communities in the context of available opportunities.

The implementation of condition #34 may include the involvement of individual Aboriginal communities or groups of communities with common interests situated in a common geographic area.

In its decision, the EA Board ordered the MNR to build upon initiatives already underway and to provide new opportunities for Aboriginal communities to benefit from forest management activities in their local areas.

MNR implements condition #34 in a manner consistent with the CFSA, which provides legislative authority to the MNR for the sustainable management

and use of forest resources. The CFSA has enabled the MNR to put mechanisms in place that may assist in facilitating the implementation of condition #34.

While responsibility for implementation of condition #34 rests with the MNR, the EA Board recognized that the involvement of other parties is critical to successful implementation. Such involvement would include participation of First Nations and other Aboriginal communities, the forest industry, and other government bodies (e.g., Ontario ministries, the Department of Indian and Northern Affairs Canada, and Natural Resources Canada).

Aboriginal participation in forest management and economic development activities is summarized under four categories: access to resources, role in planning and management, silvicultural opportunities, and training and development.

Access to Resources

First Nations are often in a position to operate as forest harvesters. Although Ontario's wood supply is almost completely allocated to SFL holders, the MNR has helped the industry and Aboriginal communities negotiate access to resources. For example, harvest opportunities are made available through overlapping licences issued to First Nations.

Role in Planning and Management

MNR districts have sought out effective forums for Aboriginal communities to have a greater say in the planning and management of nearby forest resources. It is mandatory for FMPs to include a detailed Native Background Information Report and Native Values maps. districts have provided financial assistance to some communities either to prepare these components themselves or to hire archaeological research contractors.

In many districts, First Nations are represented together with industry and government on forest management planning teams.

Silvicultural Opportunities

Forest renewal and tending includes growing trees, planting, seeding, spacing, cleaning, thinning, and site preparation. Many First Nations have experience

in some silvicultural activities and district managers have sought specific agreements between industry and First Nations to detail the type and scope of contract work that can be made available. This work, taken together, can contribute to an effective economic development program.

Training and Employment

Although the MNR does not have a training mandate, district managers have found ways to help coordinate existing federal and provincial programs to assist Aboriginal communities in preparing for increased participation in forest management activities.

On a local level, districts have provided hands-on training for many years through the Native Internship Program and Sault College's Aboriginal Resource Technician Program.

In some districts, the forest industry provides the training strategy, recruitment and hiring support, and business opportunities for independent contractors. In some instances, the MNR is helping to establish Aboriginal training centres by providing facilities, equipment and leadership. For many years MNR districts have been providing opportunities for joint projects with First Nations, by providing training, funding, facilities, and equipment.

District Progress

The MNR is required to report on the progress of negotiations under condition #34 for each district. Of the 26 MNR districts, five are outside the Area of the Undertaking (AOU), including Aylmer, Aurora, Cambridge, Midhurst, and Peterborough. Table 9a summarizes district progress within the AOU. Highlights of the benefits provided to Aboriginal communities in 2003-2004 for each MNR district follows.

Algonquin Park

Management unit: Algonquin Park Forest

There are no First Nations or other Aboriginal communities situated within the Algonquin Park Forest. However, Algonquin Park is part of the traditional territory of several Algonquin First Nation communities located near the provincial park, in-

cluding Mattawa-North Bay, Pikwakanagan (formerly Golden Lake), and Whitney. Portions of the park are also included in the Robinson-Huron Treaty and Williams Treaty areas.

Extensive consultations continued with these First Nations groups as part of the implementation of a Memorandum of Understanding (MOU). Opportunities related to harvest, silviculture and road works were discussed as well as dialogue related to the development and implementation of forest management plans. In 2003/04, these three communities harvested 97,603 m³ of wood in total.

First Nations contractors were actively involved in tree-marking, stand improvement, seedling production and FMP values mapping work. Active involvement in training and development activities also occurred. The Algonquin First Nation communities continue to make significant strides in becoming involved in operational forestry in Algonquin Park.

Bancroft District

Management units: Bancroft-Minden Forest and parts of Mazinaw-Lanark Forest

There are no First Nation communities in the Bancroft District. However, the Algonquin First Nation community has satellite communities in the Ardoch, Bancroft, Sharbot Lake, and Whitney areas, and the Pikwakanagan First Nation at Golden Lake also has interests in the district.

Discussions have been carried out between the Bancroft Minden Forest Company Inc. and various First Nation groups communities and individuals. Approximately five First Nations persons are working in the logging industry and approximately three are employed to do silvicultural work, cruising, prescriptions or tree marking. Approximately 270 hectares of logging was carried out by First Nation members working for other licence holders. One First Nation representative serves on the Local Citizens Committee for the Mazinaw-Lanark Forest.

Chapleau District

Management units: Superior and Pineland-Martel Forests

The Brunswick House, Chapleau Cree, Chapleau Ojibway and Michipicoten First Nations are the four First Nation communities with reserves lands located in the Chapleau District. In addition, the First Nation communities of Flying Post, Mattagami, Missanabie Cree, Mississauga and Sagamok Anishnawbek all have traditional areas of interest within the district.

MNR and the forest industry have continued to foster communication with local First Nation groups. Tembec Industries Inc. (Tembec) has hired staff, and created a First Nation task force to effectively deal with First Nation concerns. Domtar Inc. (Domtar) has assisted a First Nation community to develop a community business plan.

Several employment opportunities were developed over the course of the year which included: air photo interpretation, compliance inspections, road works, inventory, and silviculture work.

Cochrane District

Management units: Cochrane-Moose River Management Unit, and Iroquois Falls and Smooth Rock Falls Forests

There are nine Aboriginal communities which fall within or have portions of their traditional territories in the Cochrane District. From north to south these are Fort Severn First Nation, Weenusk First Nation, Attawapiskat First Nation, Fort Albany First Nation, Kashechewan First Nation, Moose Cree First Nation (MCFN), Moccreebec Council of the Cree Nation, Taykwa Tagamou Nation (TTN) and Wahgoshig First Nation. Only Taykwa Tagamou Nation, Moose Cree First Nation and Wahgoshig First Nation (WFN) have all or a portion of their traditional territories within the Area of Undertaking.

Communication efforts included discussions related to First Nations groups obtaining silviculture, tending, and harvesting contracts. Community open houses were held in relation to planning and operational issues on the Smooth Rock Falls Forest. The MNR worked with WFN to address long standing values protection concerns, and with TTN and Tembec to address operational concerns. Tembec has hired staff, and created a First Nation task force to effectively deal with First Nation concerns. A number

of agreements have been created and used to foster effective communications and actions related to First Nation concerns within the district. Several First Nation communities, companies and the MNR are parties to these agreements. A committee has been established to promote Aboriginal employment. TTN, participated on the 2005-2025 Smooth Rock Falls Forest Management Planning team.

Various agreements within the district provide opportunities for First Nations groups to harvest timber. During 2003-04 approximately 73,000 m³ of wood was harvested by First Nations on the Iroquois Falls Forest. Approximately 85,000 m³ of wood was harvested on the Smooth Rock Falls Forest. A First Nation logging company harvested wood allocated to them on the Moose River Management Unit – approximately 70,000 m³.

Employment opportunities in the district included:

- tree planting opportunities;
- woodlands employment at Abitibi-Consolidated Company of Canada (Abitibi) for six people, with seasonal opportunities for an additional eight;
- Tembec hired one person on a silviculture contract and offered tree planting and slash pile burning opportunities, and
- the WFN planted 300,000 seedlings on the Iroquois Falls Forest.

To build capacity for additional employment opportunities the MNR purchased two GPS units for each of WFN, MCFN and TTN.

Both the MNR and the forest industry have provided funding for a variety of educational and developmental activities including: compliance and GPS training, work experience opportunities, job fairs, and participation in cultural and social events.

Dryden District

Management units: Dryden, Wabigoon, and English River Forests

The Eagle Lake and Wabigoon Lake First Nations are located in the Dryden District. The Grassy Narrows, Lac Seul, Ojibway Nation of Saugeen, Wabauskang, and Naotkamegwanning Anishinabe (Whitefish Bay) First Nations are other communities with interest or ongoing activities in the district.

Communication efforts between the district and local First Nations groups continued through 2003-2004. In addition, the forest industry also undertook communication efforts including First Nations participation in the implementation of Weyerhaeuser Company Limited's (Weyerhaeuser) forest certification system.

First Nations groups in the district were also active in forest management activities during the year. Timber harvest activities included work on three blocks in the Dryden Forest, totalling an available volume of just under 70,000 m³. Weyerhaeuser purchased wood from First Nations contractors operating on the Wabigoon and Dryden Forests as well as from private land in the area. The total volume purchased during 2003-2004 was 89,365 m³. Weyerhaeuser also provided employment opportunities in pre-commercial thinning (112 ha, employing 12 people), regeneration surveys, and student employment (four people). The company also purchased 3.1 million seedlings from a First Nations operated tree nursery.

Training opportunities in the district included the participation of two individuals in a First Nation Ranger program sponsored by Bowater Canadian Forest Products Inc. (Bowater), and through on the job training initiatives associated with employment opportunities described above.

Fort Frances District

Management units: Sapawe and Crossroute Forests

The First Nations located in the Fort Frances District are Big Grassy, Anishinaabeg of Naongashiing (Big Island), Couchiching, Lac La Croix, Naicatchewenin, Nicickousemenecaning, Rainy River, Seine River and Stanjikoming. The Naotkamegwanning Anishinabe (Whitefish Bay) and Ojibways of Onegaming First Nations are located outside of the district, but their traditional territories extend into the district. Lac des Mille Lacs First Nation has an uninhabited reserve adjacent to the Sapawe Forest. Lac Des Mille Lacs First Nation and Wabigoon Lake First Nation are involved in discussions related to silvicultural work and the utilization of non-timber forest resources. Both of

these communities are also interested in being involved with the forest management planning process,

On the Sapawe Forest, there were no licences issued to, or supply agreements entered into, with First Nation communities because presently the full allowable harvest for the Sapawe Forest is allocated. A number of First Nation people with the majority of them living in or near the community of Atikokan, earn a livelihood from the forest by working in area mills, woodlands operations, or other forestry related occupations.

The Crossroute Forest has several licences issued to First Nations, most of which are self-employed loggers working independent of their respective First Nation; however some logging contracts have been signed by First Nations themselves. On the Forest, there were nine FRLs issued to First Nations individuals, and an additional three First Nations individuals held harvesting contracts on the SFL. Abitibi awarded silvicultural contracts (planting, site preparation, thinning, slash pile burning) on the Crossroute Forest to six Aboriginal individuals and First Nations. There were seven additional contracts for forest access; three for construction of new roads, two for road maintenance, one for roadside brushing, and one for beaver control.

Hearst District

Management units: Gordon Cosens and Hearst Forests

Constance Lake is the only First Nation (CLFN) community located in Hearst District. The Hornepayne, Moose Cree and Taykwa Tagamou First Nations also have interests within the district. All of these communities have been contacted and participate, to varying degrees, in forest management activities. CLFN has agreed to participate on the 2007 Hearst forest management planning team and has appointed three representatives. Meetings and workshops have taken place in the community to explore the topics of interest to this First Nation. Efforts to involve First Nations in the 2005 FMP for the Gordon Cosens are ongoing, and have included information sessions related to the FMP held in various communities.

A First Nations logging company has been pursuing discussions with the MNR and forest industry, including discussions which concluded with an agreement between the company and the Industrial, Wood and Allied Workers of Canada (IWA) over the summer of 2004. A second company active on the Gordon Cosens Forest has been involved in discussions with Tembec to pursue First Nation harvesting opportunities for under-utilized species.

Three First Nations logging companies are active within the district harvesting timber under licence or contract for local mills. Mammatawa Inc. harvested approximately 95,000 m³ in 2003-04 on the Hearst Forest. First Nation Timber Ltd. harvested 100,000 m³ in 2003-04 on the Gordon Cosens Forest, and the Moose Cree First Nation harvested 84,000 m³ on private land.

First Nations persons comprise half of the workforce of the Lecours Lumber Co. Limited (Lecours) sawmill on the CLFN reserve, including millrights and a supervisor. A logging company associated with CLFN currently employs 28 workers full and part-time. Lecours contracts three First Nations independent owner-operator truckers. MNR has funded a liaison position filled by a CLFN member. Other employment opportunities within the district include slash burning and thinning contracts.

Tembec in partnership with Outland Reforestation Inc., Confederation College, and the MNR launched a First Nation Forestry Youth Employment Program. A total of 12 youths, representing seven First Nations communities, participated in the four-week training program. The program is intended to provide First Nations youth the opportunity to gain experience in the field of forestry. A recent First Nations forestry graduate was hired locally, and industry and MNR have jointly contributed to a scholarship program. Cultural awareness training for industry staff also occurred during the year.

Kemptville District

Management units: parts of Mazinaw-Lanark Forest

The Mohawk Council of Akwesasne and the Algonquins of Ottawa and Sharbot Lake hold regular discussions about forest management opportuni-

ties. A member representing the Algonquin communities participates on the Local Citizen's Committee. The district continues to encourage and support these efforts to become more involved in the forest industry.

There were no contracts, licences or allocations designated in this district during 2003/04.

Kenora District

Management units: Kenora and Whiskey Jack Forests

The 12 First Nation communities located in the Kenora District are: Ochiichagwe'Ba bigoining (Dalles), Grassy Narrows, Northwest Angle #33, Northwest Angle #37, Ojibways of Onegaming, Iskatewizaagegan #39, Shoal Lake #40, Wabaseemoong, Wabauskang, Washagamis Bay, Wauzhushk Onigum and Naotkamegwanning Anishinabe (Whitefish Bay). Big Grassy and Big Island First Nations are located in the Fort Frances District, but have reserve lands and an interest in resource planning in the Kenora District.

Information was provided to the Grassy Narrows, Wabauskang and Whitefish Bay First Nations related to the 2004-2024 Whiskey Jack FMP, Contingency Plan and Slash Pile Burning Program.

Employment opportunities have been available through a company associated with Wabaskaung First Nation which has an annual commitment to harvest 50,000 cubic metres from the Whiskey Jack Forest.

Training related to forest management planning was offered to local First Nations communities. Cultural awareness training was conducted by Abitibi for 45 of their staff and contractors. Additionally, Abitibi is pursuing mechanized harvest operator training with members of the Grassy Narrows First Nation.

Abitibi has actively supported local First Nations through providing expertise in wood marketing, and providing financial support for a number of cultural events.

Kirkland Lake District

Management units: Timiskaming Forest and part of the Iroquois Falls Forest

There are two First Nation communities (Wahgoshig and Matachewan), and one Aboriginal

community (Beaverhouse) located within the Kirkland Lake District. The Temagami and Mattagami First Nations are located outside of the district, but these communities have expressed an interest in forest management within the district.

Discussions involving the MNR, forest industry and First Nations have continued as part of the forest management planning process. Discussions have focused primarily on silvicultural opportunities potentially leading to harvesting contracts. An agreement is in place with Abitibi, Wahgoshig (WFN) and the MNR to address social, cultural and economic concerns on the Iroquois Falls Forest.

Harvesting opportunities included an agreement with Tembec that allowed WFN to harvest 75,000 m³ during the year. A horse logging company owned by a Matachewan First Nations member also successfully harvested 2,550 m³ in the Timiskaming Forest. Other employment opportunities included tree planting (1.6 million trees), pre-commercial thinning (819 hectares), and roadside brushing of approximately 20km, and trucking of wood. As a result of a district strategy (Management of Crown Timber on Patented Lands), significant progress has been made on establishing partnerships between local First Nations and industry to harvest All Trees Reserved on private lands.

Other district participation in forest management activities included:

- office and field meetings to review Annual Work Schedules and discuss any impacted values;
- development of a liaison position to assist with values collection and protection and to participate in FMP planning teams and a First Nation Advisory Committee, and
- support for training opportunities.

Nipigon District

Management units: Lake Nipigon, Kenogami, Ogoki, Pic River Ojibway Forests, and parts of the Black Sturgeon and Lakehead Forests.

The First Nations located in the Nipigon District are Animbiigoo Zaagi'igan Anishinaabek, Aroland, Biinjitiwabik Zaaging Anishinaabek, Eabametoong, Ginocgaming, Kasabonika Lake, Long Lake #58,

Marten Falls, Neskantaga, Nibinamik, Ojibways of the Pic River, Pays Plat, Red Rock, Sand Point, Wawakapewin and Webequie First Nations. However, Kasabonika Lake, Neskantaga, Nibinamik, Wawakapewin and Webequie First Nations are north of the AOU. The Constance Lake, Fort William, Kaishke Zaaging Anishinaabek (Gull Bay) and Whitesand First Nations have traditional lands within the Nipigon District.

Representatives from local First Nations communities participate on planning teams for the Black Sturgeon, Kenogami, Lake Nipigon, and Pic River Ojibway Forests. Several communities are also involved in reviewing annual work schedules. Other First Nations groups have participated in values data collection projects.

Employment related to employment opportunities occur in the Kenogami, Lake Nipigon, and Lakehead Forests. Activities included:

- discussions between a First Nations logging company and the IWA have continued through 2003-2004, but did not reach conclusion during the year;
- a First Nations company completed and submitted business plans for a small sawmill and a commercial fuel wood facility based on a 25,000 m³ conditional commitment of white birch from the Lake Nipigon Forest. The MNR review is expected to be completed by the spring of 2004 with the goal of issuing a facility licence under the CFSA in 2004-2005;
- two First Nations received a 25 hectaresshare in Superior North Loggers Inc. to harvest timber on the Lakehead Forest;
- Long Lake Forest Products Inc. and Domtar have agreements with local First Nations communities to provide employment opportunities;
- First Nations crews participated in road building and maintenance activities;
- the forest industry has provided opportunities for local First Nations groups to bid on silvicultural contracts, and
- an overlapping licence commitment on the Lake Nipigon Forest was expanded to include opportunities to salvage fire and blowdown damaged timber.

Timber harvesting licences and opportunities not requiring a licence have been made available in the district including:

- a licence to harvest was awarded to a First Nation on the Lakehead Forest. The licence is for the harvest of 16,170 cubic metres of wood over a two year period;
- a First Nations owned and operated logging company is licensed to harvest 648,900 m³ of green wood, and 100,000 m³ of salvage under an overlapping forest resource licence on the Black Sturgeon Forest;
- three First Nations communities continue to harvest their five-year harvest commitments for the Lake Nipigon Forest 2001 to 2006 FMP. Annual commitments in the 2001 FMP total more than 140,000 m³;
- salvage of timber from Nipigon Fire 58 also occurred during the summer of 2003;
- three First Nations communities have formed corporations that have been issued forest resource licences to harvest on the Ogoki forest. For these corporations, this is the fourth year that they have had new licences and/or continued operations from last year. The licences permit the harvest of more than 160,000 cubic metres of wood;
- three overlapping forest resource licenses are held by First Nations groups on the Pic River Ojibway Forest. The licenses permit the harvest of just over 27,000 m³ per year of green timber and 68,000 m³ of salvage;
- a First Nations logging company continued to harvest private land in the vicinity of Nipigon, and
- the conditions of the Ogoki SFL provide the opportunity for the First Nations communities plus one non-First Nation community to harvest up to 50% of the harvest allocation.

Silviculture employment opportunities within the district in 2003-2004 included:

- juvenile spacing, treeplanting and pre-commercial thinning work on the Black Sturgeon Forest;
- forest renewal, maintenance and protection on the Lake Nipigon Forest. More than

500,000 trees were planted by First Nations crews, and

- tree planting by native crews also occurred on the Lakehead Forest.

Training and development activities undertaken in 2003-2004 in the district included:

- Bowater sponsored a First Nation Ranger Program, which gives First Nations youth an opportunity to participate in forestry type work. They are currently expanding this program to have MNR more involved to promote other programs such as, Fish and Wildlife and Parks;
- all First Nations planning team members in the Kenogami Forest were invited to initial FMP training;
- Long Lake Forest Products Inc. employees in both the mill and woodlands operations received numerous training courses including: Mechanical Harvesting, First Aid, Environmental Management System, Scaling and Operational Layout, and Forest Compliance, and
- most individuals working for Three Nations Management Inc. also received numerous types of training courses including: Mechanical Harvesting, First Aid, Environmental Management System, Scaling and Operational Layout, and Forest Compliance.

North Bay District

Management units: Temagami Management Unit, Nipissing Forest

The Antoine Algonquin, Dokis, Mattawa-North Bay Algonquins, Nipissing, and Temagami First Nations have communities located within the North Bay District.

In this fiscal year communication efforts to all of these First Nations continued through the North Bay District Aboriginal Working Group (AWG). Four AWG meetings were held regarding resource issues including forestry, non-timber forest products, value added forestry products and economic development in general. The SFL holder, Nipissing Forest Resource Management Inc. (NFRMI) has participated on an ongoing basis with the AWG.

The Tema-Augama Anishnabai (TAA) and Temagami First Nation (TFN) were active members

and represented on the forest management planning team for the preparation of the 2004-2024 FMP on the Temagami Management Unit. Discussions related to the formation of an SFL for this unit also occurred. The Temagami Land Claim Treaty negotiations continued throughout this time period.

During 2003-2004, First Nations members were actively involved in timber harvesting including:

- Dokis First Nation harvest of 210 hectares (15,787 m³);
- Nipissing First Nation harvest of 193.7 hectares (23,284 m³);
- Mattawa-North Bay Algonquins harvest of 93.4 hectares (8,343 m³);
- Antoine First Nation harvest of 99.6 hectares (3,114 m³);
- the Nipissing First Nation harvested approximately 43,000 m³ under contract for Tembec.
- TFN did not harvest its allocations due to poor markets and difficult terrain to operate on. However, a private company operated by members of the TFN provided several full time jobs and milled 3,000 cubic metres of cedar.

In addition to timber harvesting, members of the local First Nations communities were also involved in a number of other economic undertakings including: stand improvement; manual tending, and tree planting. It is estimated that this work provided approximately 2,345 person days of employment.

This year (2003-04) represents the second year of a three-year Forestry Futures Trust Fund contract which provides funding for a tending project (978 ha). This project employed twelve First Nation members.

Educational opportunities were also developed in the district during the year. These included: The Antoine First Nation, Mattawa-North Bay Algonquins, Dokis First Nation and Nipissing First Nation participation in a three-day compliance training program, and a conference aimed at business opportunities for Aboriginal youth.

Parry Sound District

Management unit: French-Severn Forest

The French-Severn Forest is home to six First Nations communities, with a seventh community di-

rectly bordering the unit. Five communities are Ojibway, and fall under the Robinson-Huron Treaty, they are Henvey Inlet, Magnetawan, Shawanaga, Wasauksing and Dokis (borders the unit). Moose Deer Point First Nation are Pottawatomi Nishinabe and Wahta are Iroquois/Mohawk. The Algonquins of Pikwakanagan (Golden Lake), which are not inside this management unit, have some involvement in the forest management planning process.

Westwind Forest Stewardship Inc. (Westwind), the local SFL holder, has been actively involved in increasing awareness within First Nations communities of the opportunities in the local forest industry for First Nations people, and facilitating their involvement. Past discussions have facilitated the establishment of an agreement between Westwind, R. Fryer Forest Products Limited, the MNR and the Wasauksing Woodpeckers to issue a licence allowing a First Nation's members to harvest an area in Conger Township. Other topics of discussions have included the following opportunities: allocations for the communities and individuals; commercial fuelwood; non-timber forest products; silviculture, and fire fighting. Active participation by First Nations members in the FMP planning processes has continued. Westwind remains optimistic that opportunities and involvement will increase over time.

Several training and development opportunities have been undertaken to stimulate increased participation in forest management activities and included: a training session on the proper methods for harvesting of Canada yew; a chainsaw training course in which ten original community members were involved; training with the Waabnoong Bemjiwang Association to accommodate an expansion of a silviculture crew, and one local First Nations member was trained as a certified seed collector.

Pembroke District

Management unit: Ottawa Valley Forest

There are several Algonquin communities within the Pembroke District. The Algonquins of Pikwakanagan at Golden Lake is the only Indian Reservation designated under the Indian Act. However, there are several off-reserve Algonquin communities in the district. These communities are contained

within established communities including Golden Lake, Pembroke and Renfrew.

Efforts were undertaken to engage local First Nations communities in the forest management planning process.

One First Nation community was involved in the contracting of harvest of 63 hectares of timber, from which 5,104 m³ were utilized. Other First Nations work included stand improvement contracts totaling more than 200 hectares, and tree improvement work on 50 hectares.

Red Lake District

Management units: Trout Lake, Red Lake and Whiskey Jack Forests (Management for the Whiskey Jack Forest is administered by Kenora District)

The Deer Lake, Keewaywin, McDowell Lake, North Spirit Lake, Pikangikum, Poplar Hill, and Sandy Lake First Nations are located in the Red Lake District. All seven communities are remote, with winter access only, and are not located within designated forest management units. However, forest operations are carried out within the traditional use areas of the Cat Lake, Pikangikum, Wabauskang, Slate Falls, Grassy Narrows, and Lac Seul First Nations, as well as the local Aboriginal people living off-reserve in the communities of Red Lake and Ear Falls.

During 2003-2004, the Trout Lake Forest entered the draft plan review stage of the planning process for the 2004 to 2009 forest management plan. The Lac Seul First Nation is interested in the planning process and protection of values. The MNR held two meetings in the community to identify and resolve concerns around values protection.

Timber harvesting related opportunities in the district included:

- planning with Pikangikum First Nation regarding the development of a SFL through the Northern Boreal Initiative (NBI). In addition, the MNR is working in partnership with Pikangikum First Nation on the Whitefeather Forest planning initiative, a community based land use strategy that will include forestry as a land use;

- previous discussions that focused on establishing Pikangikum as Class B share holders on the Red Lake Forest management unit have been dropped in favour of first developing a broader land use strategy for the NBI area prior to any commercial forestry activity;
- approximately 27 First Nations people are currently working at the Ear Falls Sawmill, and
- eleven First Nation's people are employed in various woodlands operations within the district.

Silviculture opportunities continue to be available to First Nations communities in the district including:

- a formal standing offer between Red Lake Forest Management Company and Pikangikum First Nation for silviculture work including tree planting and thinning, and
- the company has also offered training with respect to harvest operations, road construction and millwork.

Training and development activities undertaken in the district in 2003-2004 included:

- data collection programs funded through the MNR Special Employment Program;
- sturgeon radio tagging;
- caribou calving inventory projects;
- fish population assessments, and
- a project identifying tourism opportunities.

Sault Ste. Marie District

Management units: Algoma Forest and parts of Northshore Forest

The Garden River, Mississauga, Ojibways of Batchewana, Serpent River, and Thessalon First Nations are located within the Sault Ste. Marie District. The North Shore Tribal Council is also active within the district.

During the 2003-2004 a resource liaison position was created at the district to facilitate discussions with the local First Nations communities. Discussions with local communities included land use planning and harvesting, First Nation geographic information system development, and an enhanced understanding of First Nation culture and values. The district also worked with local communities on

issues of local interest including the harvest of ground hemlock and the use of black ash in a craft business. Two memoranda of understanding were signed related to the mapping and collection of First Nations values information. Seven First Nations open houses related to forest management planning were held.

In 2003-2004 economic opportunities included:

- discussions related to the allocation of timber;
- work by the SFL holder and a First Nation to develop a First Nations forestry association;
- signing of three memorandums of understanding for work related to values collection,
- licenses totalling 1,738 hectares were issued to an Aboriginal owned company, and
- a contract for cone collection was awarded to an Aboriginal organization.

Sioux Lookout District

Management units: Caribou and Lac Seul Forests

There are 14 First Nations communities situated in the Sioux Lookout District, of which only three (Lac Seul, New Slate Falls, and the Ojibway Nation of Saugeen) are located within the AOU. Mishkeegogamang and Cat Lake are adjacent to these forests and have some of their traditional lands within the AOU.

In 2003-2004 discussions continued related to the implementation of forest management plans in the district. Local issues including the construction of an all weather road to the community of Slate Falls, harvesting operations in the vicinity of Slate Falls, and a management plan for reserve lands at Lac Seul were also discussed.

A Mishkeegogamang community member continued to participate in planning team meetings and Information Centres and facilitated meetings occurred between Mishkeegogamang Council, community members and the planning team for the 2002-2022 FMP. Bowater has undertaken discussions related to potential involvement in forest management operations by Mishkeegogamang members, and modifications of harvest practices to mitigate impacts to traditional users. Bowater has delayed starting operations in a contentious area (Dole Valley) since the spring of 2003, to develop a better understanding of

issues in the area. The Mishkeegogamang community has continued to provide values information for the FMP as part of a memorandum of understanding.

The Saugeen community does not recognize the MNR FMP process and will not participate in discussions with MNR on this topic. Bowater met with the Saugeen Chief and Council to keep the community informed of forest operations.

Employment and training opportunities within the district included:

- the Lac Seul First Nation has held a harvesting contract on the Lac Seul Forest for several years. The operations are conducted under the MFP SFL;
- there were no harvesting opportunities for the communities of Slate Falls and Cat Lake during the 2003-2004 fiscal year;
- Saugeen has advised Bowater that they do not wish to proceed with harvest contracts. However, two Saugeen First Nation members worked with Bowater contract harvest operations;
- Bowater worked with Mishkeegogamang to develop a silvicultural worker training program. Six First Nation members were involved in operational training for juvenile spacing in the fall of 2003, and
- an individual from Saugeen owns and sporadically operates a sawmill (with Crown and Reserve wood) producing lumber for local community and local mining needs. It is not known if this sawmill operated during this period.

Sudbury District

Management units: Sudbury and Spanish Forests and part of the Northshore Forest

The ten First Nations within Sudbury District are: Zhiibaahaasing, Sagamok Anishnawbek, Sheguiandah, Sheshegwaning, Ojibways of Sucker Creek, Wahnapiatae, M'Chigeeng, Whitefish Lake, Whitefish River, and Wikwemikong. Adjacent communities of Henvey Inlet and Dokis First Nations are active in the district.

All of these First Nation communities participate in discussions with the district and SFL holders. Other communication efforts included:

- an opportunity for First Nations members to participate in three Local Citizens Committees;
- invitations to participate in FMP planning teams;
- First Nations participation in values mapping;
- a First Nation Task team was initiated for the Northshore FMP, and
- cultural awareness and FMP training sessions were held within the district.

First Nations community members were also active in forest harvesting during the year. Activities included:

- harvest approval was issued to Sagamok Anishnawbek First Nation for 155 hectares (15,200 m³);
- two harvest approvals were issued for the ten First Nations listed above, as a group, for a total of 770 hectares (61,700 m³);
- an overlapping licence on the Sudbury Forest was issued to a First Nations company for approximately 3,900 hectares, (162,000 m³). The company has representation from five First Nation communities – Wahnapiatae, Wikwemikong, Whitefish Lake, Henvey Inlet and Dokis;
- a second overlapping licence on the Sudbury Forest was issued for 620 hectares, (5,800 m³), and
- two overlapping licences were issued on the Spanish Forest, one for a salvage cut of 58 hectares, (2,800 m³), and the other for second pass harvesting of red pine for 493 hectares, (11,600 m³).

First Nation Community members were also involved in silvicultural work during the 2003/04 fiscal year. Work undertaken included:

- Northshore Forest Inc. awarded contracts for the planting of 695,000 trees, 151 hectares of manual cleaning using brush saws; 106 hectares of chemical cleaning using basal bark technique and 75 hectares of pre-commercial thinning to Sagamok First Nation;

- Domtar provided a 375 hectares pre-commercial thinning contract to a contractor from Wikwemikong First Nation, and tree planting opportunities for 900,000 trees (600 hectares). Cone collection was also conducted, and
- the Vermilion Forest Management Company Limited awarded contracts for planting of 1,100,999 trees (approximately 839 hectares), manual tending of 58 hectares, and through funding from the Forestry Futures Trust Fund pre-commercial thinning on 694 hectares.

Thunder Bay District

Management units: Armstrong Forest, Brightsand Forest, Dog River-Matawin Forest, Lakehead Forest and Spruce River Forest

The four First Nations located within Thunder Bay District are Fort William, Whitesand, Lac Des Milles Lacs and Kiashke Zaaging Anishinaabek (Gull Bay). In addition, a Metis organization and a number of Aboriginal communities, including the Red Rock First Nation, Namaygoosisagagun First Nation (Collins community), and the Thunder Bay Council of the Metis Nation of Ontario, have been involved in forest management within the district.

A variety of communication efforts continued through 2003-2004. Both Whitesand First Nation (WFN) and the community of Collins participated in the development of the 2005-2025 Armstrong FMP. A Memorandum of Agreement between WFN and MNR was signed in December 2000 which includes: mapping and protection of identified native values, training, harvest and silviculture opportunities. A 'terms of reference' document related to consultation was signed in January 2004 by the community of Collins. The community also has a representative on the Armstrong Local Citizens Committee. Domtar meets with both Collins and WFN to discuss operations and opportunities for participation.

Local First Nations groups participated in operations including:

- Whitesand Forestry (Whitesand) holds a number of overlapping licences and delivered 10,288 m³ of conifer and 95,612 m³ of hardwood

during fiscal 2003-2004. In addition, Whitesand was allocated a portion of the available salvage and delivered 47,378 m³ of conifer salvage.

- a Metis-owned company, was issued their second overlapping licence for an allocation of 32,341 m³ of conifer and 480 m³ of hardwood. Only a small portion of the area was harvested.
- Whitesand was given the opportunity to operate with Buchanan Forest Products Ltd. (Buchanan) as a harvest contractor in the 2003-2004 operating year.
- Whitesand employed a number of local residents in road construction, harvesting, processing, layout and office support. Whitesand was also provided with renewal and tending contracts, including tree planting, site preparation, and manual tending.

Buchanan and Whitesand co-operated on training efforts as part of a contractual arrangement. Whitesand mechanics worked side-by-side with Buchanan mechanics in an effort to train/improve their knowledge in forest harvest equipment maintenance. A similar training approach was used to train harvesting foremen.

Timmins District

Management units: Romeo Malette, Shiningtree and Nighthawk Forests and portions of the Pineland and Spanish Forests

Mattagami is the only First Nation in the district. Flying Post First Nation is also within the Timmins District boundary but all residents live off-reserve, in Nipigon. Other interested First Nations include Matachewan, Moose Cree, Wahgoshig, Wahnapiatae, Whitefish Lake, Sagamok Anishnawbek and Taykwa Tagamou.

Several First Nation communities participated on the Nighthawk Forest Management Planning Team including: Mattagami, Matachewan, Taykwa Tagamou, Wahgoshig and Moose Cree. Several First Nation communities also participate in the current planning process for the Timiskaming Forest including Mattagami, Matachewan, Wahgoshig, Beaverhouse Aboriginal Community, Wahnapiatae, Sagamok, Whitefish Lake, Temagami and Temi. A

First Nations Advisory Committee was established for both of these planning processes to complement the planning team. This committee provides a forum for First Nations to discuss issues and concerns and provide positive suggestions for improvement and change to the planning process.

The forest industry remains engaged in discussions with various First Nations communities in the area. First Nations involvement in operational activities in the district included: 52, 000 m³ of wood cut by Gawuhigaewin Community Development Corporation, and MNR support of the Matachewan First Nation Forestry Liaison position.

A number of training activities were undertaken over the year including: a career development day at the Mattagami First Nation, students working with MNR district staff to gain experience, a field day for training in using the global position system and geographic information system for block layout, a computer system and plotter has been set up to assist in values mapping - the MNR has participated by sponsoring the technician on training courses, technical support, and by providing surplus equipment (plotter). A trapper's workshop was organized focused on new trapping legislation, firearms registration, nuisance beaver and trap cabin issues.

Wawa District

Management units: Big Pic, Black River, Magpie, Nagagami, Wawa and White River Forests

The four First Nations located in the Wawa District are Hornepayne, Michipicoten, Pic Mobert, and the Ojibways of the Pic River. Ginoogaming, Long Lake No. 58 and Missanabie Cree First Nations have traditional lands in the Wawa District and have an interest in forest management within the district.

The district met with the Hornpayne First Nation to discuss condition 34 opportunities. Both Hornpayne and Constance Lake First Nations were invited to participate in the Nagagami forest management planning process. Hornpayne First Nation participated on the planning team and fulfilled the requirements of the native consultation process of the FMPM.

For the Black River Forest two First Nations, Pic River and Pic Mobert, expressed interest in participating in the forest management planning process through participation on the planning team, having forest management open houses and in completing values collection projects. Discussions were initiated with both First Nations regarding condition 34 and opportunities on the Black River Forest. Pic River First Nation continued to harvest their allocation according to the overlapping licence agreement between Pic River Development Corporation and the SFL.

The Missanabie Cree First Nation hosted two open houses for the Magpie FMP. There were several values collection sessions held with First Nation members and elders of that community. Discussions continued between Chapleau and Wawa Districts and Tembec regarding opportunities on both the Magpie and the Superior Forests.

The Algoma (Wawa) forest management planning team provided an opportunity for a member from Michipicoten First Nation. Discussions took place regarding harvesting opportunities on the Wawa Forest and assistance was provided for the development of the Michipicoten First Nation Forestry Business Plan.

Discussions regarding an overlapping licence with the Pic River Development Corporation and Domtar on the White River Forest continued.



Chapter 9

Research, Scientific Studies, Technical and Policy Development

The MNR keeps pace with the constantly expanding knowledge base for sustainable forest management through research, scientific studies, and technical and policy development programs. These studies and programs span a range of subjects, including: development of new and improved data and information sources; the creation and implementation of new policies, procedures, and guidelines for forest management planning (now called forest management guides); the development of new forest management methods, models, and tools; and, continuing long-term monitoring programs and scientific studies.

This chapter highlights a few examples of progress the MNR has made during 2003-04, in co-operation with its partners, on specific policy development programs, technical and scientific programs. Much of the research undertaken by the MNR is ongoing, may cover subjects indirectly related to forest management, and is not reported here. For an indication of the nature of other research work undertaken by the MNR go to <http://www.mnr.gov.on.ca>, or refer to the research section of the CD distributed with printed copies of this report.

Developing sustainable mixedwood practices in a stand-level adaptive management (SLAM) framework.

Although boreal mixedwood stands account for approximately 50% of Northern Ontario's productive forests a lack of proactive mixedwood management in the past has resulted in stands that now have less than optimum productivity and undesirable species mixtures. Resource managers are seeking reliable guidelines for promoting desirable species mixtures to enhance the economic and ecological diversity in these stands.

In 2002, Living Legacy Trust awarded \$489,200 over 18 months to a collaborative research group, led by Ontario Forest Research Institute staff, to conduct a stand-level adaptive forest management project known as the SLAM Project in two representative mixedwood forests in northeastern Ontario.

The project is focussed on testing innovative techniques for achieving productive mixtures of conifers and hardwoods at operational scales and monitoring associated changes in ecological indicators. Field implementation and monitoring began during the 2003 field season. The research is being conducted in aspen-dominated mixedwood stands near Gogama and Cochrane.

An active adaptive management approach will be used to speed learning and ensure that results are quickly incorporated into practice. Results of this research will help resource managers to:

- Promote desirable composition, structure, quality, and growth rate of boreal mixedwood stands;
- Improve policies and practices for enhancing economic and ecological sustainability of boreal mixedwood forests, and
- Better understand the opportunities and challenges of active adaptive management.

Forest Management Guide Progress

In 2000-01, MNR hired a group of independent consultants to review all existing forest management guides and provide recommendations to maintain their effectiveness while improving their efficiency. The resulting report contained 80 recommendations; with a key recommendation to reorganize and amalgamate the 34 documents studied into a concise set of 6 guides. These guides would include:

- revisions to the existing silviculture guides, the cultural heritage guide and the resource-based tourism guide, and
- the development of 3 new guides, addressing forest management at three hierarchical scales – landscape, stand and site.

Work on the amalgamation project began immediately following acceptance of the consultants' report in 2000-01. Progress to date includes:

- a revision of the resource-based tourism guide was finalized and published in 2001-02;
- the set of silviculture guides was completed in 2003-04, as described in the Boreal Mixedwood Silviculture Guide sidebar on page 67;
- the revision of the cultural heritage guide and preliminary work on reviewing the 1991 *Timber Management Guideline for the Protection of Cultural Heritage Resources* began in the late 1990s.

A revision team was struck in 2003-04 to develop the new guide.

- After extensive background work in 2002-03, MNR created a guide development team in 2003-04 to begin the work of creating the first of the three new guides. The development team included representatives from MNR's Forest Policy Section (2), forest industry (2), and one each from Canadian Parks and Wilderness Society, Wildlands League, and the Ontario Federation of Anglers and Hunters. The development team was supported by two science teams, one for each of the Boreal and Great Lakes-St. Lawrence Forest regions. These science teams included staff from MNR, the Canadian Forest Service, and consultants.

Given the hierarchical or nested nature of these three documents, it was necessary to begin development of the Landscape Guide before detailed work could begin on the Stand and Site Guides. Nonetheless, some background research was undertaken during 2003-04, primarily looking at the effectiveness of the existing stand- and site- related guides.

Boreal Forest Landscape Dynamics Simulator (BFOLDS)

BFOLDS is a computer model developed by MNR to simulate forest fire disturbance spatial patterns for the Canadian Boreal Forest. This model will help forest managers understand the variability and randomness of large scale fire regimes, and move towards the emulation of natural disturbance patterns, which is a goal of the CFSA, and the *Forest Management Guide for Natural Disturbance Pattern Emulation*.

BFOLDS can predict medium-term forest fire regimes and forest cover type changes over large forest regions and many millions of hectares. It effectively combines the best and most recent published science on forest fire processes and succession with Ontario spatial databases of weather, fire ignition patterns, forest species distribution, soil, and terrain. Cover type transitions are based on regional Boreal Forest succession expertise.

The model simulates what fire disturbances could happen on the landscape without human intervention under present or hypothetical conditions. Simulated scenarios are probabilities of various aspects of forest fires and their consequences. For example the model will predict that a certain geographic location will have a specific chance of burning over a given period of time or that a given forest area in a particular landscape has a specific chance of attaining a given age. These model simulations are based on criteria such as weather, site conditions (including species, age and composition), and patterns of previous burns. These factors, acting together, make the modelled scenarios closer to the randomness and uncertainty of nature.

BFOLDS can be used to:

- explore and understand the nature of Boreal Forest fire disturbance regimes and how these vary through time and over large areas. The outcomes of disturbance result in varying forest patterns, structure, and composition, also referred to as bounds of natural variation;
- simulate future forest landscape conditions in a spatially explicit manner (linked to landbase and relative to adjacent conditions), and
- establish benchmark values for forest disturbance regimes and forest cover changes in a quantitative, objective, defensible way. The model helps to understand the variability in natural patterns and provides a range of targets, showing tendencies and likelihood of occurrence.

Resource managers in Ontario are also using BFOLDS to decide how much old growth the landbase can sustain and where on the landscape to plan for it.

In 2003-04 accomplishments related to this project included the training of MNR planners and science specialists to use BFOLDS, and publishing a book and several journal publications about emulating natural disturbances and model development. Next steps for research and development include conducting sensitivity analyses for input databases and model parameters, testing and calibrating the embedded forest succession routines, and using BFOLDS simulations as natural benchmarks in policy and guideline development processes.

Ice Storm Related Research

In early January 1998, a massive ice storm struck eastern Canada and the northeastern United States. The resulting damage from the storm was severe, with losses totalling \$6.4 billion. Prior to this event relatively little information on ice storm damage had been published. In response to this event, the MNR, invested significant resources into research related to ice storm damage. In 2003-04 much of this work was concluded.

Two special issues of the *Forestry Chronicle* (Vol 77, No4 (2001) and Vol 79, No. 1 (2004)) were produced containing a significant amount of MNR research. In total, 10 publications were produced with the participation of Ontario Forest Research Institute authors, documenting ice storm impacts and forest recovery. Based on this work Ontario is now in a better position to respond to future ice storm events when they occur. For instance it is now known that:

- applications of phosphorus and potassium in damaged sugar maple stands help trees recover more quickly;
- damage to more than 50% of the crown results in reduced syrup production for up to 3 years while the tree recovers;
- trees with less than 50% crown damage are more resilient with less dramatic impacts on syrup production;
- pre-storm forest management practices appear not to influence the degree of damage, and
- in red pine stands, damage is followed by rapid wood quality loss through the actions of insects and decay that follows the event. Rapid salvage of ice-damaged red pine is recommended.

Boreal Mixedwood Silviculture Guide

In May 2003 the *Silviculture Guide to Managing Spruce, Fir, Birch and Aspen Mixedwoods in Ontario's Boreal Forest* was finalized and released. This document was required by Timber Management Class EA T&C 94d.

This guide was developed by an interdisciplinary team of MNR specialists, in consultation with experts from within Ontario and across the country.

Provincial Wildlife Population Monitoring

Provincial wildlife population monitoring is undertaken to demonstrate that healthy populations of forest wildlife continue to occur across the AOU and to contribute to an understanding of how forest management affects wildlife populations. Wildlife population monitoring under T&C #81 of the Timber Class EA approval was initiated in 1995 through partnerships with other monitoring agencies, and in 1996 MNR established the Wildlife Assessment Program, staffing three locations in North Bay, Timmins, and Thunder Bay. During 2003-04 under the direction of the Provincial Terrestrial Assessment Program, monitoring partnerships with external parties were maintained and implementation of its monitoring approach continued across the AOU.

Wildlife Assessment partnership activities included ongoing support for Bird Studies Canada (BSC), to monitor forest bird migration, owls, and red shouldered hawks, as well as support for the University of Guelph's long-term small-mammal monitoring in Algonquin Park. By contributing data, support also continued for the second *Ontario Breeding Bird Atlas*. The Wildlife Assessment Program continued its participation (initiated in 2001) in the final year of a project led by the Canadian Forest Service to develop local level bio-indicators of sustainable forest management.

The Wildlife Assessment Program completed year 2 of a three-year pilot study on small mammals, forest birds and amphibians across a network of 180 randomly selected, geographically distributed, permanent sample sites representative of major forest types. The purpose of this pilot study is to evaluate this type of monitoring survey across broad geographic regions of Ontario. The intent is to implement full-scale surveys that will provide results for the selected species groups that are representative of the areas monitored.

The furbearer distribution and relative abundance trapper mail survey was also continued. Staff also initiated a review to examine the program's direction,

priorities, and approaches and produced a draft Wildlife Population Program Monitoring Plan.

In 2003-2004 the Wildlife Assessment Program, through the Provincial Terrestrial Assessment Program, continued work to maintain a central database as a repository for program data, and provide other researchers the opportunity of accessing and sharing this data.

Soil Quality Monitoring of Shallow Soil Ecosites After Full-tree Logging

The ES11/12 soil quality monitoring project was developed in response to concerns that full-tree logging was being prescribed in FMPs for very shallow sites. This logging method is a Not Recommended (NR) practice where soils are less than 20 centimeters deep and, as such, requires an exception monitoring program. The current project has a strong partnership base, which includes MNR and 5 northwest Ontario forest companies. The partners have equally supported the project by providing a combined total of \$360,000 of funding over a three-year period.

The project was designed to meet the following objectives:

- to provide defensible scientific information to critically examine the current NR designation;
- to provide quantitative evidence for the determination of acceptable thresholds (e.g., percentages of nutrient removed through logging operations);
- to provide adequate regional coverage, in terms of soil/site conditions and other operational variants, and
- to develop a set of Best Management Practices (BMP) that must be employed when harvesting stands that have been identified as ES11 and 12.

To accomplish these objectives the project adopted a tiered-sampling approach that consisted of detailed, repeated (pre- and post-harvest) soil and vegetation surveys for eight case study sites (Level I plots), which include both full-tree (NR) and tree

length (R) treatment blocks. In addition, 99 – Level II plots (comparable to Growth and yield plots) have been established and measured on full-tree logged ES11/12 sites situated across the Northwest Region.

It is anticipated that the results from this project will be used, in part, during the development of MNR's new stand- and site-level guides.

Shoreline Forestry Research Program

Shoreline areas in Ontario's forests encompass a diverse set of values including fish habitat, shoreline appearance, wildlife habitat, heritage and tourism values. Direction for management of these areas has been provided by the *Timber Management Guidelines for the Protection of Fish Habitat* and usually involves the maintenance of shoreline reserves intended to protect shoreline values. However, shoreline forests are not excluded from the CFSA requirement to emulate natural disturbance and landscape patterns during forest management and maintenance of linear reserves may not be representative of natural forest conditions. Research and science synthesis from Ontario and Quebec support the conclusion that undesirable aquatic impacts of many forestry operations are primarily associated with roads, landings, and water crossings, rather than harvested areas. As Ontario moves towards more active management of shoreline forest areas there remains considerable uncertainty about the ability of forestry to simulate natural shoreline forest disturbance regimes and about environmental risks associated with forest management operations along shorelines.

In 2001, CNFER researchers initiated a project entitled "*Can Boreal Forest Management Safely Emulate Natural Disturbance Patterns in Shoreline Forests?*". The project was supported primarily by a \$617,000 grant from the Living Legacy Trust program and through support from a number of industry and government partners. The purpose of the project was to conduct a science-based assessment of environmental risks associated with shoreline forestry in the

boreal forest management zone of Ontario and suggest improvements to guidelines and best management practices. The project consisted of 1) an extensive field survey of active shoreline management areas to access site disturbance and impacts to fish habitat in both terrestrial and aquatic values and 2) intensive monitoring of a shoreline harvest area to evaluate changes in hydrology, water chemistry and nutrient flux associated with harvest.

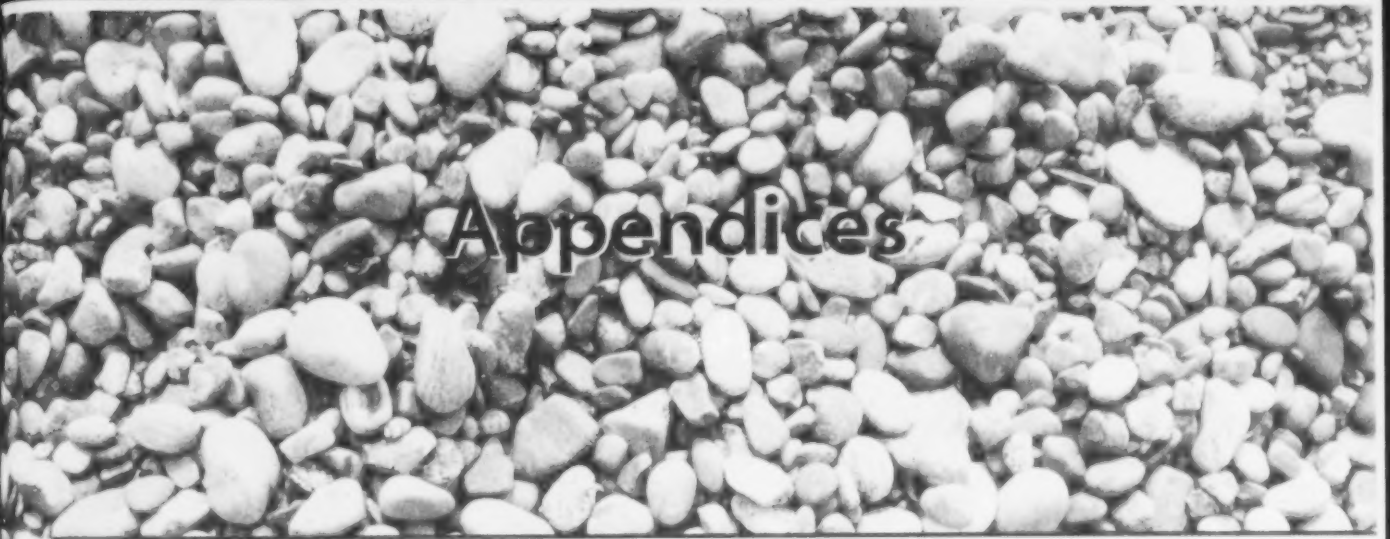
Project highlights include:

1. The development of a field guide to measure terrestrial and aquatic ecosystem response to shoreline forestry was completed in 2001 and refined throughout the project. The guide includes procedures, data forms and a customized MS Access database.
2. A total of 108 shoreline harvesting sites were surveyed across Northern Ontario. Survey results include quantification of residual vegetation, disturbance to riparian zones and sedimentation events. Disturbance rates were generally low, however, ecosite-specific best management practices should be implemented to avoid site disturbance.
3. An intensive monitoring site, established in 2002, was harvested in 2004. Monitoring of surface and groundwater dynamics will continue for another year.
4. Several workshops field tours have been held to transfer the results of the research to partners, researchers and forest managers.

The results of this research are contributing to the ongoing revision of forest management guides.

Boreal Mixedwood Notes

Work continued on this set of notes, which provide background information on the ecology of and management philosophy for Ontario's boreal mixedwood forests. The first set of 23 notes were released in September 2000. Approximately 20 additional notes were under development during 2003-04 to complete the series, anticipated for release in 2005.



Appendices

- Appendix 1 Key to Management Units (April 1, 2003) (designated under the Crown Forest Sustainability Act, Section 7)
- Appendix 2 Total Provincial Area by Satellite and Forest Resources Inventory Classifications, 2001 (all areas in thousands of hectares).
- Appendix 3 Forest Management Plans Approved for Implementation in 2003, and Plans Scheduled for Approval and Implementation in 2004, 2005, 2006 and 2007.
- Appendix 4 Forest-dependent Communities in Ontario (ranked by percentage of forestry workers).
- Appendix 5 Forest Renewal Charges for 2003/04 (\$ per cubic metre).
- Appendix 6 Acronyms Used in this Report.
- Appendix 7 Documents referenced in this Report.

A CD of additional background material is included with printed versions of this report. The same information may be downloaded from the MNR website by individuals using digital versions of this report.

Appendix 1 Key to Management Units (April 1, 2003)
(designated under the Crown Forest Sustainability Act,
Section 7)

MNR Region	MU #	Management Unit Name	Status ¹
Northwest	444	Armstrong Forest	SFL
	178	Black Sturgeon Forest	SFL
	173	Brightsand Forest	SFL
	175	Caribou Forest	SFL
	405	Crossroute Forest	SFL
	177	Dog River-Matawin Forest	SFL
	535	Dryden Forest	SFL
	174	English River Forest	SFL
	350	Kenogami Forest	SFL
	644	Kenora	SFL
	702	Lac Seul Forest	SFL
	260	Lake Nipigon Forest	SFL
	796	Lakehead Forest	SFL
	415	Ogoki Forest	SFL
	851	Pic River Ojibway Forest	SFL
	840	Red Lake Forest	SFL
	853	Sapawe Forest	SFL
	030	Spruce River Forest	SFL
	120	Trout Lake Forest	SFL
	130	Wabigoon Forest	SFL
	490	Whiskey Jack Forest	SFL
Northeast	448	Algoma Forest	SFL
	067	Big Pic Forest	SFL
	370	Black River Forest	SFL
	375	Cochrane-Moose River	CR
	438	Gordon Cosens Forest	SFL
	601	Hearst Forest	SFL
	012	Iroquois Falls Forest	SFL
	565	Magpie Forest	SFL
	390	Nagagami Forest	SFL
	150	Nighthawk Forest	SFL
	754	Nipissing Forest	SFL
	680	Northshore Forest	SFL
	765	Pineland-Martel Forest	SFL
	930	Romeo Malette Forest	SFL
	868	Shiningtree Forest	SFL
	040	Smooth Rock Falls Forest	SFL
	210	Spanish Forest	SFL
	889	Sudbury Forest	SFL
	508	Superior Forest	SFL
	898	Temagami	CR
	610	Timiskaming Forest	SFL
	949	Wawa Forest	SFL
	060	White River Forest	SFL
Southern	451	Algonquin Park Forest	AFA
	220	Bancroft-Minden Forest	SFL
	360	French-Severn Forest	SFL
	140	Mazinaw-Lanark Forest	SFL
	780	Ottawa Valley Forest	SFL
	990	Southern Ontario ²	CR

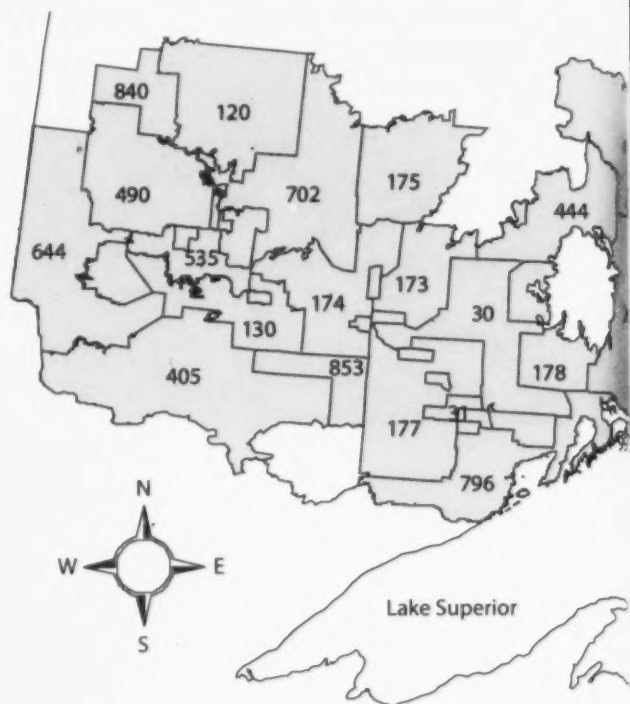
¹ Status - Forest Management Planning Responsibility

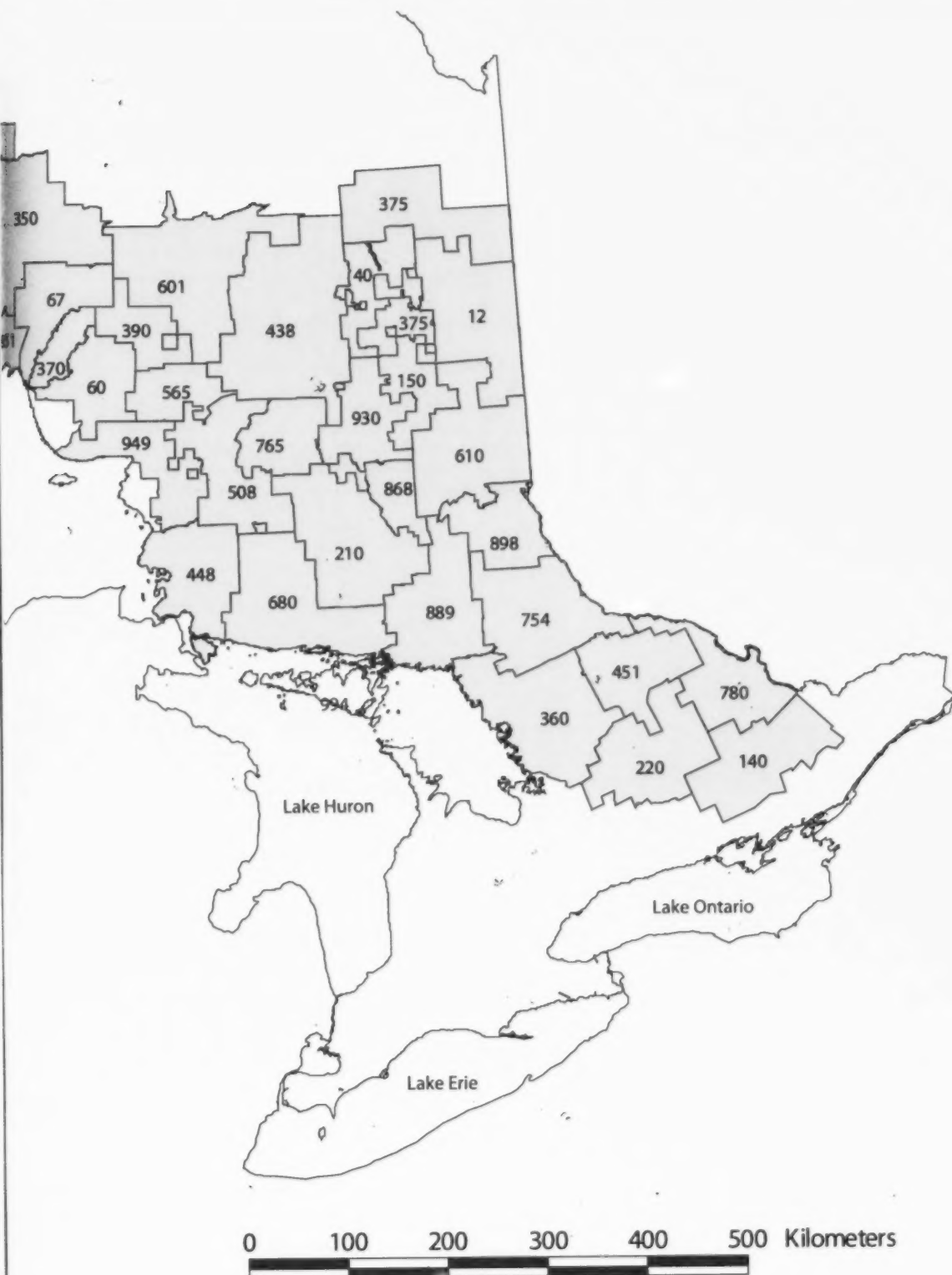
SFL - Sustainable Forest Licence

CR - Crown

AFA - Algonquin Forest Authority

² Southern Ontario (MU # 990) is south of the AOU.





Produced by: Forest Evaluation & Standards Section – Forest Management Branch

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	644	Kenora	SFL
	702	Lac Seul Forest	SFL
	260	Lake Nipigon Forest	SFL
	796	Lakehead Forest	SFL
	415	Ogoki Forest	SFL
	851	Pic River Ojibway Forest	SFL
	840	Red Lake Forest	SFL
	853	Sapawe Forest	SFL
	030	Spruce River Forest	SFL
	120	Trout Lake Forest	SFL
	130	Wabigoon Forest	SFL
	490	Whiskey Jack Forest	SFL
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	370	Black River Forest	SFL
	375	Cochrane-Moose River	CR
	438	Gordon Cosens Forest	SFL
	601	Hearst Forest	SFL
	012	Iroquois Falls Forest	SFL
	565	Magpie Forest	SFL
	390	Nagagami Forest	SFL
	150	Nighthawk Forest	SFL
	754	Nipissing Forest	SFL
	680	Northshore Forest	SFL
	765	Pineland-Martel Forest	SFL
	930	Romeo Malette Forest	SFL
	868	Shiningtree Forest	SFL
	040	Smooth Rock Falls Forest	SFL
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	780	Ottawa Valley Forest	SFL
	990	Southern Ontario ²	CR

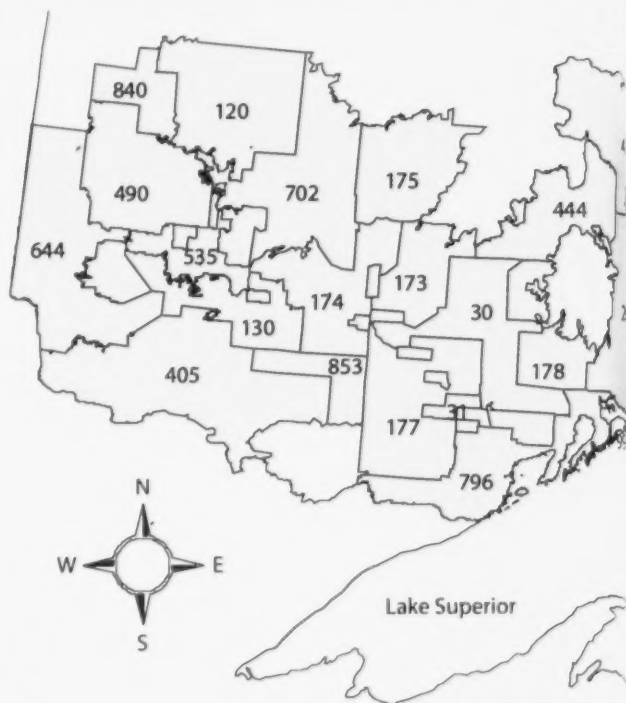
¹ Status - Forest Management Planning Responsibility

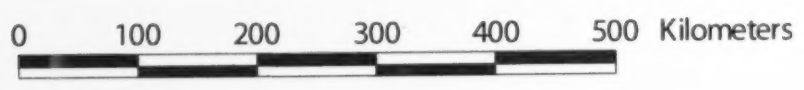
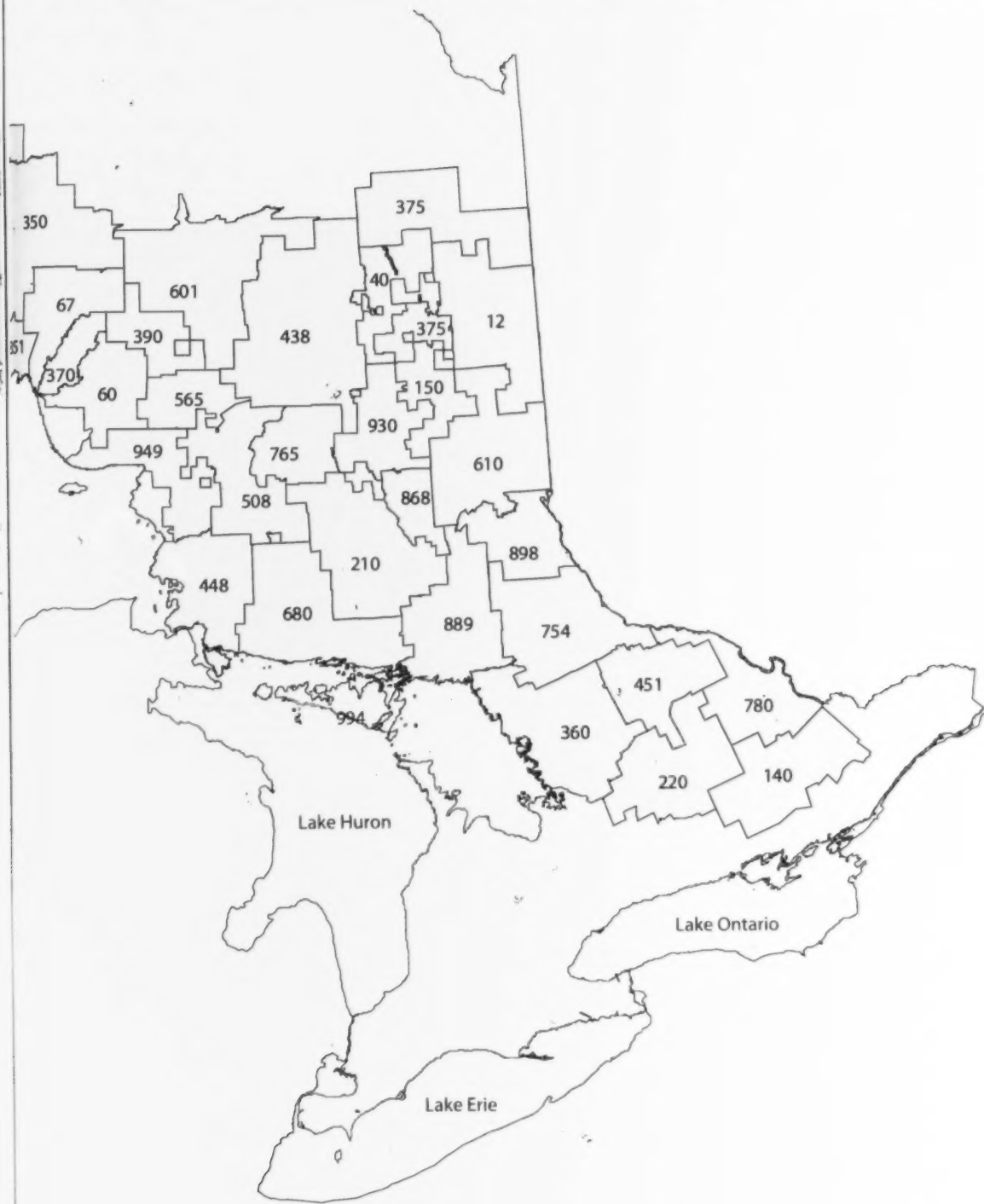
SFL - Sustainable Forest Licence

CR - Crown

AFA - Algonquin Forest Authority

² Southern Ontario (MU # 990) is south of the AOU.





Produced by Forest Evaluation & Standards Section - Forest Management Branch

Appendix 2 Total Provincial Area by Satellite and Forest Resources Inventory Classifications, 2001⁴ (all areas in thousands of hectares)

Land Class	Total Provincial Area - Satellite Classes			Total Inventoried Area - FRI			Total - Planning Area - FRI		
	Crown	Parks	Other	Total	Crown	Parks	Other	Total	Total
Forested Land									
Productive Forest	44,401.4	4,962.8	6,371.8	55,736.0	30,010.2	4,109.9	6,071.2	40,191.3	33,683.0
Non-Productive Forested Land									
Wetland/Open Muskeg ¹	9,693.0	1,398.9	70.8	11,162.7	885.9	149.4	246.8	1,282.1	1,106.0
Treed Muskeg ²	13,360.1	1,001.6	393.8	14,755.5	2,229.8	270.9	99.1	2,599.9	1,465.3
Tundra	25.7	33.0	0.0	58.7	0.0	0.0	0.0	0.0	0.0
Brush & Alder ³	n/a	n/a	n/a	n/a	903.3	99.1	237.0	1,239.4	984.9
Rock	294.6	98.4	127.8	520.8	266.9	118.9	100.9	486.7	437.9
Subtotal non-productive forested	23,373.3	2,531.9	592.4	26,497.7	4,286.0	638.3	683.8	5,608.1	3,994.1
Non-Forested Land									
Developed Agricultural Land	8.3	3.5	4,454.0	4,465.8	14.7	1.1	3,925.8	3,941.7	421.4
Grass & Meadow	121.0	3.3	1,268.3	1,392.6	13.1	1.3	858.9	873.3	228.6
Unclassified Land	129.2	9.0	438.6	576.8	366.2	25.3	938.2	1,329.7	630.3
Sub-total:	258.4	15.8	6,161.0	6,435.2	394.0	27.7	5,722.8	6,144.6	1,280.3
Water	8,199.7	1,476.8	359.3	10,035.9	6,755.3	924.4	21.6	7,701.3	6,342.3
Water (Great Lakes)	8,886.9	0.0	0.0	8,886.9	1,082.0	45.5	2.4	1,129.9	0.0
All Water	17,086.6	1,476.8	359.3	18,922.8	7,837.3	969.9	24.0	8,831.3	6,342.3
Grand Total	85,119.8	8,987.3	13,484.5	107,591.7	42,527.6	5,745.8	12,501.9	60,775.3	45,299.7

¹ Includes "Wetland" satellite class

² Includes "Treed Bog & Fen" and "Swamp" satellite classes

³ Not available as satellite class

⁴ The information reported in this appendix is updated on a 5 year cycle

Appendix 3: Forest Management Plans Approved for Implementation in 2003, and Plans Scheduled for Approval and Implementation in 2004, 2005, 2006 and 2007

Plans Approved for Implementation in 2003

Management Unit Name (current or proposed)	MU#	District	Remarks
Cochrane-Moose River	375	Cochrane	Cochrane (520) and Moose River (738) amalgamated April 1, 2003
Nighthawk Forest	150	Timmins	Driftwood Forest (410), Timmins Forest (400) and Timmins (900) amalgamated April 1, 2003
Ogoki Forest	415	Nipigon	Nakina North Forest (240) and Ogoki Forest (241) amalgamated April 1, 2003
Red Lake Forest	840	Red Lake	
Wabigoon Forest	130	Dryden	
White River Forest	060	Wawa	

Plans Scheduled for Approval and Implementation in 2004

Management Unit Name (current or proposed)	MU#	District	Remarks
English River Forest	230	Dryden	English River Forest (174) and Brightsand Forest (173) to be amalgamated April 1, 2004
French-Severn Forest	360	Parry Sound	
Magpie Forest	565	Wawa	
Nipissing Forest	754	North Bay	
Temagami	898	North Bay	
Trout Lake Forest	120	Red Lake	
Whiskey Jack Forest	490	Kenora	

Plans Scheduled for Approval and Implementation in 2005

Management Unit Name (current or proposed)	MU#	District	Remarks
Algoma Forest	448/949	Sault Ste. Marie	Algoma Forest (448) and Wawa Forest (949) to be amalgamated April 1, 2005
Algonquin Park Forest	451	Algonquin Park	
Armstrong Forest	444	Thunder Bay	
Dog River-Matawin Forest	177	Thunder Bay	
Gordon Cosens Forest	438	Hearst	
Iroquois Falls Forest	12	Cochrane	
Kenogami Forest	350	Nipigon	
Northshore Forest	680	Sault Ste. Marie	
Sapawe Forest	853	Fort Frances	
Smooth Rock Falls Forest	40	Cochrane	
Spanish Forest	210	Sudbury	
Sudbury Forest	889	Sudbury	

Plans Commencing Preparation in 2004 for Approval and Implementation in 2006

Management Unit Name (current or proposed)	MU#	District	Invitation to Participate - Tentative Date and Remarks
Bancroft-Minden Forest	220	Bancroft	February 2004
Black River Forest	370	Wawa	February 2004
Black Sturgeon Forest	178	Nipigon	February 2004
Dryden Forest	535	Dryden	February 2004
Kenora Forest	644	Kenora	February 2004
Lac Seul Forest	702	Sioux Lookout	February 2004
Lake Nipigon Forest	260	Nipigon	February 2004
Mazinaw-Lanark Forest	140	Bancroft	February 2004
Nagagami Forest	390	Wawa	February 2004
Ottawa Valley Forest	780	Pembroke	February 2004
Pic River Ojibway Forest	851	Nipigon	February 2004
Pineland-Martel Forest	765	Chapleau	February 2004
Shiningtree Forest	868	Timmins	February 2004
Spruce River Forest	030	Thunder Bay	February 2004
Superior Forest	508	Chapleau	February 2004
Timiskaming Forest	610	Kirkland Lake	February 2004

Plans Commencing Preparation in 2005 for Approval and Implementation in 2007

Management Unit Name (current or proposed)	MU#	District	Invitation to Participate - Tentative Date and Remarks
Big Pic Forest	067	Wawa	February 2005
Caribou Forest	175	Sioux Lookout	February 2005
Crossroute Forest	405	Fort Frances	February 2005 - 'Highrock Forest (290) and Fort Frances-Flanders Forest (827) amalgamated April 1, 2002
Hearst Forest	601	Hearst	February 2005
Lakehead Forest	796	Thunder Bay	February 2005
Romeo Malette Forest	930	Timmins	February 2005

Appendix 4 Forest-dependent Communities in Ontario (ranked by percentage of forestry workers)

Census Subdivision	Subdivision Type	2001 ¹ Population	Labour Force	Forestry Workers	Percent Forestry
Dubreuilville	Township	967	620	375	60.5%
James	Township	467	235	120	51.1%
Terrace Bay	Township	1,950	1,035	475	45.9%
White River	Township	993	555	250	45.1%
Red Rock	Township	1,233	560	230	41.1%
Dorion	Township	442	220	80	36.4%
Nipigon	Township	1,964	1,010	365	36.1%
Aroland 83	Reserve	346	120	40	33.3%
Smooth Rock Falls	Town	1,830	910	290	31.9%
Ear Falls	Township	1,150	635	180	28.4%
Greenstone	Town	5,662	3,020	805	26.7%
Opasatika	Township	325	135	35	25.9%
Brudenell, Lyndoch and Raglan	Township	1,565	650	155	23.9%
Atikokan	Township	3,632	1,790	425	23.7%
Hearst	Town	5,825	3,260	770	23.6%
Dryden	City	8,198	4,390	1,000	22.8%
Chapleau	Township	2,832	1,455	330	22.7%
Espanola	Town	5,449	2,575	575	22.3%
Rainy River, Unorganized	Unorganized	1,605	865	185	21.4%
Mattice-Val Cote	Township	891	380	80	21.1%
Conmee	Township	748	435	90	20.7%
Val Rita-Harty	Township	1,022	485	100	20.6%
Fauquier-Strickland	Township	678	245	50	20.4%
Chapple	Township	910	515	105	20.4%
Baldwin	Township	624	295	60	20.3%
Matachewan	Township	308	100	20	20.0%
Charlton	Town	276	100	20	20.0%
Gillies	Township	522	200	40	20.0%

¹ The information reported in this appendix is updated on a 5 year cycle

Note: Forestry Workers is an aggregate of the following NAIC 4 digit classifications:

Code	Description
1131	Timber tract operations
1132	Forest nurseries and gathering of forest products
1133	Logging
1153	Support activities for forestry
3211	Sawmills and wood preservation
3212	Veneer, plywood and engineered wood product manufacturing
3219	Other wood product manufacturing
3221	Pulp, paper and paperboard mills
3222	Converted paper product manufacturing

Source: Statistics Canada 2001 Census of Population

Appendix 5 Forest Renewal Charges for 2003-2004 (\$ per cubic metre)

		Rates Charged by Tree Species or Groups of Species						
MNR Region	Management Unit	White & Red Pine Grade 1	White & Red Pine Grade 2	Hemlock & Cedar	Other Conifer	Poplar & White Birch	Hardwood Grade 1	Hardwood Grade 2
Northwest	Armstrong Forest	\$11.00	\$11.00	\$2.00	\$3.00	\$0.50	\$8.00	\$1.50
	Black Sturgen Forest	\$11.00	\$11.00	\$6.00	\$7.00	\$0.75	\$8.00	\$1.50
	Brightsand Forest	\$11.00	\$11.00	\$6.00	\$6.00	\$0.75	\$8.00	\$1.50
	Caribou Forest	\$11.00	\$11.00	\$5.00	\$5.00	\$0.75	\$8.00	\$1.50
	Crossroute Forest	\$11.00	\$11.00	\$0.00	\$5.50	\$0.50	\$8.00	\$0.50
	Dog River - Matawin Forest	\$11.00	\$11.00	\$7.00	\$7.00	\$0.75	\$8.00	\$1.50
	Dryden Forest	\$6.00	\$6.00	\$6.00	\$6.00	\$2.00	\$1.50	\$1.50
	English River Forest	\$11.00	\$11.00	\$5.50	\$6.00	\$0.75	\$8.00	\$1.50
	Kenogami Forest	\$11.00	\$11.00	\$6.25	\$6.25	\$1.00	\$1.00	\$1.00
	Kenora Forest	\$5.00	\$5.00	\$3.00	\$3.00	\$0.50	\$8.00	\$1.50
	Lac Seul Forest	\$11.00	\$11.00	\$3.00	\$3.00	\$0.50	\$8.00	\$1.50
	Lake Nipigon Forest	\$2.00	\$2.00	\$2.00	\$3.00	\$0.50	\$8.00	\$1.50
	Lakehead Forest	\$4.00	\$4.00	\$0.00	\$4.00	\$0.50	\$0.50	\$0.50
	Ogoki Forest	\$11.00	\$11.00	\$6.00	\$2.00	\$0.50	\$8.00	\$1.50
	Pic River Ojibway Forest	\$11.00	\$11.00	\$2.00	\$2.00	\$0.50	\$8.00	\$1.50
	Red Lake Forest	\$1.00	\$1.00	\$1.00	\$3.00	\$0.75	\$8.00	\$1.50
	Sapawe Forest	\$6.00	\$6.00	\$2.00	\$4.00	\$0.50	\$8.00	\$1.50
	Spruce River Forest	\$11.00	\$11.00	\$6.00	\$6.00	\$0.50	\$8.00	\$1.50
	Trout Lake Forest	\$11.00	\$11.00	\$1.90	\$1.90	\$0.50	\$8.00	\$1.50
	Wabigoon Forest	\$11.00	\$11.00	\$1.90	\$1.90	\$0.50	\$0.50	\$0.50
	Whiskey Jack Forest	\$11.00	\$11.00	\$5.00	\$6.00	\$1.00	\$8.00	\$1.50
Northeast	Algoma Forest	\$5.00	\$5.00	\$6.00	\$6.00	\$0.50	\$6.25	\$1.00
	Big Pic Forest	\$11.00	\$11.00	\$6.00	\$6.00	\$0.50	\$8.00	\$1.50
	Black River Forest	\$11.00	\$11.00	\$6.00	\$6.00	\$0.50	\$8.00	\$1.50
	Cochrane - Moose River Forest							
	Apr. 1, 2003 - Nov. 30, 2003	\$11.00	\$11.00	\$5.50	\$1.00	\$0.10	\$8.00	\$1.50
	Dec. 1, 2003 - Mar. 31, 2004	\$11.00	\$11.00	\$5.50	\$0.00	\$0.00	\$8.00	\$1.50
	Nighthawk Forest	\$4.00	\$4.00	\$4.00	\$4.00	\$0.50	\$0.50	\$0.50
	Gordon Cosens Forest	\$11.00	\$11.00	\$1.00	\$4.57	\$0.68	\$8.00	\$1.50
	Hearst Forest	\$11.00	\$11.00	\$1.00	\$4.75	\$0.60	\$8.00	\$1.50
	Iroquois Falls Forest	\$11.00	\$11.00	\$2.00	\$4.50	\$0.50	\$8.00	\$1.50
	Magpie Forest	\$11.00	\$11.00	\$2.00	\$2.00	\$0.50	\$8.00	\$1.50
	Nagagami Forest	\$11.00	\$11.00	\$6.41	\$6.41	\$0.75	\$8.00	\$1.50
	Nipissing Forest	\$11.00	\$6.00	\$0.50	\$6.00	\$0.50	\$8.00	\$1.50
	Northshore Forest	\$3.62	\$3.62	\$1.00	\$2.00	\$0.50	\$4.00	\$0.50
	Pineland - Martel Forest	\$11.00	\$11.00	\$0.60	\$3.00	\$0.60	\$8.00	\$1.50
	Romeo Malette Forest	\$6.00	\$6.00	\$4.30	\$4.30	\$0.55	\$8.00	\$1.50
	Shiningtree Forest	\$7.70	\$7.70	\$4.20	\$4.20	\$0.35	\$5.60	\$1.05
	Smooth Rock Falls Forest	\$11.00	\$11.00	\$0.00	\$0.00	\$0.00	\$8.00	\$1.50
	Spanish Forest	\$10.00	\$10.00	\$1.00	\$4.00	\$0.50	\$8.00	\$1.50
	Sudbury Forest	\$11.00	\$6.00	\$0.50	\$6.00	\$0.50	\$8.00	\$1.50
	Superior Forest							
	Apr. 1, 2003 - Sep. 30, 2003	\$11.00	\$11.00	\$4.50	\$5.34	\$0.50	\$8.00	\$1.50
	Oct. 1, 2003 - Mar. 31, 2004	\$11.00	\$11.00	\$1.00	\$5.34	\$0.50	\$8.00	\$1.50
	Temagami	\$11.00	\$11.00	\$6.00	\$6.00	\$0.50	\$8.00	\$1.50
	Timiskaming Forest	\$11.00	\$11.00	\$4.80	\$4.80	\$0.40	\$8.00	\$1.50
	Wawa Forest	\$11.00	\$11.00	\$1.00	\$6.00	\$0.50	\$8.00	\$1.50
	White River Forest	\$11.00	\$11.00	\$1.00	\$1.00	\$0.50	\$8.00	\$1.50
Southern	Algonquin Park Forest	\$4.75	\$4.75	\$0.10	\$0.10	\$0.10	\$4.75	\$0.10
	Bancroft - Minden Forest	\$11.50	\$0.25	\$1.00	\$2.00	\$0.50	\$8.00	\$0.25
	French - Severn Forest							
	Apr. 1, 2003 - May 31, 2003	\$11.00	\$1.50	\$2.00	\$6.00	\$0.50	\$8.00	\$0.50
	Jun. 1, 2003 - Mar. 31, 2004	\$9.95	\$1.50	\$2.00	\$6.00	\$0.50	\$6.95	\$0.50
	Mazinaw - Lanark Forest	\$10.00	\$0.25	\$0.25	\$0.25	\$0.50	\$5.00	\$0.25
	Ottawa Valley Forest	\$11.00	\$1.50	\$1.50	\$6.00	\$0.50	\$8.00	\$1.50

Appendix 6 Acronyms Used in this Report

AFA	Algonquin Forestry Authority
AOU	Area of the Undertaking
ANSI	Area of Natural and Scientific Interest
BFOLDS	Boreal Forest Landscape Dynamics Simulator
B.t.	Bacillus thuringiensis
CFS	Canadian Forest Service (a section of Natural Resources Canada)
CFSA	Crown Forest Sustainability Act
EA	Environmental Assessment
ELC	Ecological Land Classification
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	<i>Forest Management Planning Manual for Ontario's Crown Forests</i>
FOCIS	Forest Operations Compliance Information System
FRI	Forest Resources Inventory
FRL	Forest Resource Licence
FTG	Free-To-Grow
GIS	Geographic Information System
IFM	Intensive Forest Management
LCC	Local Citizens Committee
MFTIP	Managed Forest Tax Incentive Program
MNR	Ministry of Natural Resources (Ontario)
MOE	Ministry of Environment (Ontario)
MOU	Memorandum of Understanding
NCC	Nature Conservancy of Canada
NDPE Guide	<i>Forest Management Guide for Natural Disturbance Pattern Emulation</i>
NRCAN	Natural Resources Canada
NWOA	Norfolk Woodlot Owners Association
OLL	Ontario's Living Legacy
PGP	Permanent Growth Plot
PSP	Permanent Sample Plot
Room to Grow	<i>Room to Grow: Final Report of the Ontario Forest Accord Advisory Board on Implementation of the Accord</i>
RSA	Resource Stewardship Agreement
SEIM	Socio-Economic Impact Model
SFL	Sustainable Forest Licence
SFMM	Strategic Forest Management Model
STARS	Silviculture Treatment, Assessment and Reporting System
Timber Class EA approval	<i>Reasons For Decision And Decision, Class Environmental Assessment by the Ministry of Natural Resources for Timber Management on Crown Lands in Ontario</i>
T&C	Term and Condition (of the Timber Class EA approval)

Appendix 7 Documents Referenced in this Report

Most of the Ministry of Natural Resources publications referred to below are available online at:
<http://ontariosforests.mnr.gov.on.ca/spectrasites/internet/ontariosforests/publications.cfm>

- Most of the Provincial Acts referred to below are available online at: <http://www.e-laws.gov.on.ca/>

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